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Indian Health Focus

# Injuries

2000-2001

US DEPARTMENT OF HEALTH AND HUMAN SERVICES



**Indian Health Service**  
Office of Public Health Support

*Division of Program Statistics*

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**Indian Health Service**

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# INTRODUCTION

The Indian Health Service (IHS) is an agency of the Department of Health and Human Services (HHS). The IHS goal is to assure that comprehensive, culturally-acceptable personal and public health services are available and accessible to American Indian and Alaska Native (AI/AN) people.

The mission of the IHS, in partnership with AI/AN people, is to raise their physical, mental, social, and spiritual health to the highest level.

The IHS has carried out its responsibilities through developing and operating a health services delivery system designed to provide a broad-spectrum program of preventive, curative, rehabilitative, and environmental services. This system integrates health services delivered directly through IHS facilities, purchased by IHS through contractual arrangements with providers in the private sector, and delivered through Tribally operated programs and Urban Indian health programs.

The IHS is concerned with the health of AI/AN of all ages. The IHS presents an overview of the health status of AI/AN in its annual publication, *Trends in Indian Health*. However, IHS recognizes that there are segments and conditions of the AI/AN population that require special attention, such as infants, youth, women, the elderly and injuries. This publication examines the major category of injuries and poisonings and its subgroups—accidents, suicides, homicides, firearm injuries, and other injuries. This publication refers to “accidents” as “unintentional injuries” to be consistent with the terminology used by the IHS Injury Prevention Program. It is based on data published in the IHS publications *2000-2001 Trends in Indian Health* and *2000-2001 Regional Differences in Indian Health*.

The population of interest for this publication is AI/AN youth residing in the IHS service area. The IHS service area consists of counties on and near federal Indian reservations. The AI/AN people residing in the service area comprise about 60 percent of all AI/AN people residing in the U.S. It is estimated to be approximately 1.6 million in 2003 compared to 2.6 million in the entire U.S.



# SUMMARY OF DATA

Injuries and poisonings are a major problem in Indian country. This is apparent from analyzing the major category of injury and poisoning, as well as its subgroups: unintentional injuries, suicides, homicides, firearm injuries, and other injuries.

Unintentional injuries is the third leading cause of death for the AI/AN population, overall, and for AI/AN females. It is second for AI/AN males and fourth for U.S. all-races and white males. Unintentional injuries is not among the top five leading causes for U.S. all-races or white females. Unintentional injuries also appears high on the list of leading causes of death for specific AI/AN age groups. It is fourth for AI/AN infants, first for age groups 1 through 44, third for 45 to 54 years, and fourth for 55 to 64 years.

The AI/AN age-adjusted death rate due to injury and poisoning (unintentional injury, suicide, homicide, firearm injury, and other injury) have decreased 50 percent since 1972-74. Despite the improvements, the 1996-98 AI/AN rate (132.0) is still 2.6 times the 1997 U.S. all-races rate (50.2) and 180 percent greater than the 1997 U.S. white rate

(47.1). The rate varies considerably among the IHS Areas. The highest Area rate (Tucson, 183.9) is 3.7 times the U.S. all-races rate (50.2). The Nashville Area rate (82.2) which is the lowest among the IHS areas is 1.6 times the U.S. all-races rate. AI/AN males are much more likely to die from injury and than AI/AN females. The AI/AN male rates are almost triple the AI/AN female rates for age groups 35 to 44. The AI/AN male rates are more than double the U.S. all-races male rates for age groups 1 through 74 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

The AI/AN age-adjusted unintentional injury death rate for AI/AN has decreased over 54 percent since 1972-74. In 1972-74, the AI/AN rate (206.7) was 4.0 times the 1973 U.S. all-races rate (51.7) and 4.2 times the 1973 U.S. white rate (49.5). For 1996-98, the AI/AN rate (94.7) is 215 percent greater than the 1997 U.S. all-races rate (30.1) and 220 percent greater than the U.S. white rate (29.6). The Navajo, Tucson, Aberdeen, Phoenix and Billings Areas each have a rate that exceeds 120.0. This rate is over two times higher the lowest Area rate (Oklahoma,

59.3), but over 4.6 times the U.S. all-races rate (30.1). Excluding the very elder population (75 years and older), the highest AI/AN male rate (199.0) occurs in the 35 to 44 year age group. This is 3.2 times the comparable peak for the U.S. all-races male population (63.0 for 65 to 74 years) and 2.6 times the comparable peak for the AI/AN female population (77.3 for 45 to 54 years). The AI/AN female peak is in turn 2.3 times the comparable peak for the U.S. all-races female population (32.9 for 65 to 74 years). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

The AI/AN male age-adjusted motor vehicle unintentional injury death rate has decreased 59 percent since 1972-74. For 1996-98, the AI/AN male rate (70.7) is 69 percent greater than the 1997 U.S. all-races male rate (21.7) and the U.S. white male rate (21.6). The AI/AN female age-adjusted motor vehicle unintentional injury death rate has decreased 40 percent since 1972-74. For 1996-98, the AI/AN female rate (38.5) is 277 percent greater than the 1997 U.S. all-races female rate (10.2) and 274 percent greater than the U.S. white female rate (10.3).



These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

During the period since 1972-74, the AI/AN age-adjusted suicide death rate reached a peak in 1975-77 (23.6) and a low in 1984-1986 (17.6). The AI/AN rate in 1996-98 (20.2) is 15 percent greater than that low. It is also 91 percent higher than the 1997 U.S. all-races rate (10.6) and 79 percent greater than the 1997 U.S. white rate (11.3). The rate is the highest in Alaska among the IHS Areas. The Alaska rate (45.9) is 39 percent greater than the next highest Area rate (Aberdeen, 33.1) and 5.8 times the lowest Area rate (Nashville, 7.9). The highest AI/AN male suicide death rates occur in 15 to 24 (59.1) and 25 to 34 (60.2) year old age groups. The peaks for AI/AN females are reversed in terms of age groups (13.7 and 14.7, respectively), but these AI/AN female rates are over one-fifth the AI/AN male rates. The U.S. all-races male suicide death rates are highest for 85 years and older (60.3) and 75 to 84 years (40.9). For U.S. all-races females, the highest rates occur in the 35 to 54 year age groups (6.8 to 7.3). These AI/AN rates have been adjusted to com-

pensate for misreporting of AI/AN race on state death certificates.

The AI/AN age-adjusted homicide death rate have decreased 45 percent since 1972-74. The 1996-98 AI/AN rate (14.5) is 81 percent greater than the 1997 U.S. all-races rate (8.0), but 209 percent greater than the 1997 U.S. white rate (4.7). The Phoenix (20.7) and Navajo (19.7) Area rates are more than double the U.S. all-races rate (8.0). The lowest IHS Area rate occurs in California (7.0). This is the only Area rate that is below the U.S. all-races rate. The highest AI/AN male homicide death rates occur in the age groups from 15 to 44 years (33.4 to 35.4). This is also true for U.S. all-races males (12.5 to 28.2). However, for AI/AN females and U.S. all-races females, the highest rate occurs in the under 1 year age group (14.4 and 7.3, respectively). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

The AI/AN age-adjusted firearm injury death rate have decreased 36 percent since 1978-80. U.S. all-races and white rates have decreased since 1979 (2 percent, respectively). The 1996-98 AI/AN rate (17.6) is 44 percent greater

than the 1997 U.S. all-races rate (12.2) and 76 percent greater than the 1997 U.S. white rate (10.0). The AI/AN age-adjusted firearm injury death rate varies considerably among the IHS Areas. The highest Area rate (Alaska, 40.2) is 3.3 times the lowest Area rates (Billings and California, each with rates of 12.2); U.S. all-races rate tied with the lowest Area rates. The AI/AN male age-adjusted firearm injury death rate is highest for the 15 to 24 year age group (58.3). This is 5.7 times the peak for AI/AN females (10.2) which occurs in age group 45 to 54 years. For U.S. all-races male, the highest rate (45.8) is for age group 85 and older; it is 21 percent less than the AI/AN male rate. The highest U.S. all-races female rate (5.1) also occurs in age group 25 to 34 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

Problem drinking is associated with injuries. The AI/AN population has an age-adjusted alcohol-related death rate (46.5) that is 7.4 times the U.S. all-races rate (6.3) and 7.8 times the U.S. white rate (6.0). Between 1979-81 and 1985-87, the AI/AN rate decreased 49 percent. Since then, alcohol-



related death rates have increased 28 percent. The Aberdeen Area age-adjusted alcoholism death rate (87.4) is 13.9 times the U.S. all-races rate (6.3). It is 26 percent greater than the second highest IHS Area rate (Albuquerque, 69.1). The lowest IHS Area rate occurs in Nashville (24.1), but this is still 3.8 times the U.S. all-races rate. The highest AI/AN male alcohol-related death rate (172.0) occurs in the 55 to 64 year age group. This is 5.2 times the U.S. all-races male peak (32.8 for 55 to 64 years). The AI/AN female high rate (97.6 for 45 to 54 years) is 43 percent less than the AI/AN male peak, but it is 10.8 times the U.S. all-races female peak (9.0 for 55 to 64 years). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

Injury and poisoning is the fifth leading cause of ambulatory medical visits for AI/AN male patients (all ages). Injury and poisoning is the third leading cause of ambulatory medical visits for AI/AN patients, 15 to 24 years of age and fourth for 5 to 14 years. Injury and poisoning is the fourth leading cause of hospitalization for AI/AN patients (all ages). It third leading cause of hospitalization for AI/AN

male patients (all ages) and sixth for AI/AN female patients (all ages). Injury and poisoning is also a major leading cause of hospitalization for specific AI/AN patient age groups. It is second leading cause of hospitalization for AI/AN patients, 15 to 24 years, and is third for 5 to 14 and 25 to 44 years, fourth for 45 to 54, and fifth for 1 to 4 years. However, the number of discharges for injury and poisoning from IHS and Tribal direct and contract hospitals has been on the decline. In FY 2001, the number of such discharges was 64 percent of what they were in 1987.

Eight (8) percent of the expenses for IHS-administered contract health services (CHS) during 2000-2003 were associated with injuries and poisonings claims. During this period, the average cost of a CHS inpatient case for injuries and poisonings was \$4,879 and for outpatient case was \$200.

# SOURCES AND LIMITATIONS OF DATA

## POPULATION STATISTICS

The IHS service population consists of AI/AN identified to be eligible for IHS services. IHS service population estimates are based on official U.S. Census Bureau county data. The Census Bureau enumerates those individuals who identify themselves as being American Indian, Eskimo or Aleut. The IHS service population is estimated by counting those American Indians, Eskimos, and Aleuts (as identified during the Census) who reside in the geographic areas in which IHS has responsibilities ("on or near" reservations, i.e., contract health service delivery areas [CHSDAs]). These people may or may not use IHS services.

IHS user population estimates are based on data from the IHS Patient Registration System. Patients who receive direct or contract health services from IHS or Tribally-operated programs are registered in the Patient Registration System. Those registered AI/AN patients that had at least one direct or contract inpatient stay, ambulatory medical visit, or dental visit during the last three years are defined as users. IHS user population figures are used for calculating IHS patient care rates. In contrast, IHS service

population figures are used in calculating AI/AN vital event rates since state birth and death certificates do not provide information on use of IHS services.

IHS service populations between census years (e.g., 1980 and 1990) are estimated by a smoothing technique in order to show a gradual transition between census years. IHS service populations beyond the latest census year (1990) are projected through linear regression techniques, using the most current ten years of AI/AN birth and death data provided by the National Center for Health Statistics (NCHS). The natural change (estimated number of births minus estimated number of deaths) is applied to the latest census enumeration.

The social and economic data contained in this publication are from the 1990 census. They reflect the characteristics of persons that self-identified as American Indian, Eskimo or Aleut during the census.

## VITAL EVENT STATISTICS

AI/AN vital event statistics are derived from data provided

annually to the IHS by NCHS. Vital event statistics for the U.S. population were derived from data reported in various NCHS publications, as well as from some unpublished data from NCHS. NCHS obtains birth and death records for all U.S. residents from the state health departments, based on information reported on official state birth and death certificates. The records NCHS provides IHS contain the same basic demographic items as the vital event records maintained by NCHS for all U.S. residents, but with names, addresses, and record identification numbers deleted. It should be noted that Tribal identity is not recorded on these records. Tabulations of vital events for this publication are by place of residence.

The natality and mortality data are only as accurate as the reporting by the states to NCHS.<sup>1</sup> NCHS does perform numerous edit checks, applies verification methods, and imputes values for non-responses.

## Misreporting of Race on State Death Certificates

Misreporting of AI/AN race on state death certificates occurs, especially in areas distant from

<sup>1</sup> Arias E, Anderson RN, Hsiang-Ching K, Murphy SL, Kochanek KD. Deaths: Final Data for 2001. National Vital Statistics Reports; Vol.52 No. 3. Hyattsville, MD: National Center for Health Statistics. 2003.



traditional AI/AN reservations.<sup>2</sup> In order to determine the degree and scope of the misreporting, IHS conducted a study utilizing the National Death Index (NDI) maintained by the NCHS. The study involved matching IHS patient records of those patients who could have died during 1986 through 1988 with all death records of U.S. residents for 1986 through 1988 as contained on the NDI. The study revealed that on 10.9 percent of the matched IHS-NDI records, the race reported for the decedent was other than AI/AN. The percentage of records with inconsistent classification of race ranged from 1.2 percent in the Navajo Area to 28.0 and 30.4 percent in the Oklahoma and California Areas, respectively.

The results of the NDI study provide sufficient numbers to calculate adjustments for each IHS Area, IHS overall, and selected age groups. In addition to these adjustments based on the study findings, IHS assumed the following; a) the results from 1986-88 apply to other years, b) IHS age-group adjustments applied also to each Area, and c) the Area adjustments applied to the causes of death used in this publication (i.e. if an Area's total deaths needed to be increased

by ten percent, than the deaths for each cause of death would also increase by this same rate). These assumptions cannot be statistically supported by the results of the study. However, IHS felt that it was necessary to adjust all of the death rates in this publication to provide a meaningful and comprehensive look at health status.

These NDI adjustments were used for the first time in the 1997 edition of this publication. Both unadjusted and adjusted information is shown, as applicable. The adjustments were applied to the results obtained from using an unadjusted death file. In the 1997 edition, only the latest three years (1992-94 at that time) of death data were adjusted based on the study findings. Starting with this edition, the adjustments are extended to data years 1972 through 1998.

IHS has more specific adjustment factors for the age group under 1 year. These are derived from the linked birth/infant death data sets produced by the NCHS. IHS now has sufficient years of this data set (1983-91 and 1995-96) to calculate adjusted infant mortality rates. In this edition (as was done

for the first time in the 1997 edition with 1992-94 data), unadjusted and adjusted infant mortality rates will be shown for data years 1987 through 1998. It is reasonably assumed that data years for which linked data sets were not produced (NCHS did not produce linked data sets prior to data year 1983 and for data years 1992-94) may be adjusted based on the results from other linked data sets. These adjustments based on the linked data sets take precedent over the NDI adjustments for the under 1 year age group, described above.

The AI/AN vital event statistics in this publication pertain to only AI/AN people residing in the IHS service area. Editions of this publication before 1992 showed vital event statistics calculated on a Reservation State basis. Therefore, data were included for AI/AN residing outside the geographic areas for which IHS has responsibility. This was done in order to show trends starting in FY 1955, to correspond with the inception of the IHS program. Prior to 1972, only total Reservation State data are available.

Now that there are sufficient vital event data available for the

<sup>2</sup> IHS, Division of Program Statistics. Adjusting for Miscoding of Indian Race on State Death Certificates. November 1996.





IHS service area to show meaningful trends, this publication shows vital event statistics for the IHS service population, starting with data for calendar year 1972. IHS service area data are more indicative of the health status of the AI/AN that IHS serves. Reservation State vital event rates tend to be lower in value (i.e., lower birth rates, lower death rates) than IHS service area rates. However, the vital event tables in this publication will still include the 1955 Reservation State figure as an historical bench mark.

The AI/AN population is considerably younger than the U.S. all-races population. Therefore, the death rates presented in this publication have been age-adjusted, where applicable, so that appropriate comparisons can be made between these population groups. Two exceptions are the information presented for leading causes of death and leading cancer sites. In order to determine the leading causes of death or cancer sites for a population group, it is necessary to rank without any adjustment for age. However, it should be kept in mind that the ranking of causes of death or cancer sites for a

population group is affected by its age composition.

Beginning with the 1996 edition, the leading causes of death are shown for more detailed age groups in support of the IHS Director's initiatives on youth and elder care. In particular, the 1 to 14 year age group has been split into 1 to 4 and 5 to 14, and the 45 to 64 year age group has been split into 45 to 54 and 55 to 64.

#### **Age-Adjustment**

The age-adjusted death rates presented in this publication were computed by the direct method, that is, by applying the age-specific death rate for a given cause of death to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard since this is the standard used by NCHS. The rates for the total population and for each race-sex group were adjusted separately, by using the same standard population. The age-adjusted rates were based on ten-year age groups. It is important not to compare age-adjusted death rates with crude rates.

#### **ICD-9-Codes**

Prior to the 1993 edition of this publication, alcoholism deaths

were defined through the use of three ICD-9 cause of death code groups; 291—alcoholic psychoses; 303—alcohol dependence syndrome and; 571.0-571.3—alcoholic liver disease. Various IHS Area statisticians and epidemiologists believed this definition to be incomplete and suggested that it be expanded to include five additional ICD-9 code categories. These additional categories were used for the first time in the 1993 edition. They include; 305.0—alcohol overdose; 425.5—alcoholic cardiomyopathy; 535.3—alcoholic gastritis; 790.3—elevated blood-alcohol level; and E860.0, E860.1—accidental poisoning by alcohol, not elsewhere classified. This expanded definition results in about a 25 percent increase in the number of alcoholism deaths identified in comparison to the previous three-group definition. NCHS is now publishing alcoholism deaths with a definition that includes codes that IHS had not used, i.e., 357.5—alcoholic polyneuropathy and all of E860 (not just E860.0 and E860.1)—accidental poisoning by alcohol. To be consistent with NCHS, these additional codes are now used by IHS starting with the 1996 edition. The NCHS definition includes all of the code



groups previously used by IHS plus these new codes. The NCHS definition of alcoholism deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.

NCHS is also now publishing drug-related deaths with a definition that includes codes that IHS had not used, i.e., 292—drug psychoses and E962.0—assaults from poisoning by drugs and medicaments. To be consistent with NCHS, this additional code was used by IHS for the first time in the 1996 edition. The NCHS definition includes all of the code groups previously used by IHS plus these two codes. This NCHS definition of drug-related deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.

Injury and poisoning deaths are shown for various sub-groups in this publication, e.g., accidents, homicides, suicides. A new grouping, “injury by firearms,” was added starting with the 1996 edition because of its significance in the AI/AN community. It includes deaths with the following ICD-9 codes; E922—accident caused by firearm missile;

E955.0-E955.4—suicide and self-inflicted injury by firearms; E965.0-E965.4 and E970—assault by firearms and legal intervention; E985.0-E985.4—injury by firearms, undetermined whether accidentally or purposely inflicted. Injury by firearm causes exclude explosives and other causes indirectly related to firearms.

#### PATIENT CARE STATISTICS

Patient care statistics are derived from IHS reporting systems. There are four main patient care reporting systems. The Monthly Inpatient Services Report is a patient census report that is prepared by each IHS hospital. It indicates the number of discharges and days by type of service (e.g., adult, pediatric, obstetric, newborn), and is used for the direct inpatient workload statistics. The Inpatient Care System is the source of IHS hospital inpatient data pertaining to various patient characteristics (age, sex, principal diagnoses, other diagnoses, community of residence, etc.). The data are collected daily, one record per discharge. The Contract Care System is the source of similar contract hospital inpatient data.

The Ambulatory Patient Care System is the source of data pertaining to the number of ambulatory medical visits at IHS facilities by various patient characteristics (age, sex, clinical impression, community of residence, etc.). The data are collected daily, one record per ambulatory medical visit. The Contract Care System is the source of similar contract ambulatory medical visit data.

# SOURCES OF COPIES AND ADDITIONAL INFORMATION

Additional AI/AN health status information can be obtained from the IHS Division of Program Statistics. Specific responsibilities are as follows:

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Copies of this and other statistical publications may be obtained from Kateri L. Gachupin, Secretary at:

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This publication, other IHS statistical publications, and links to IHS data files are available on the Division of Program Statistics Web Site at:

[http://www.ihs.gov/NonMedical  
Programs/IHS\\_Stats/](http://www.ihs.gov/NonMedicalPrograms/IHS_Stats/)



# CHARTS & TABLES

CHART 1 INFANT MORTALITY RATES BY INJURY AND POISONING CAUSES

AI/AN infants die from injuries and poisonings at a rate that is 1.9 times the U.S. all-races rate. High causes of AI/AN infant injuries and poisonings deaths include homicide, motor vehicle, and suffocation in bed.

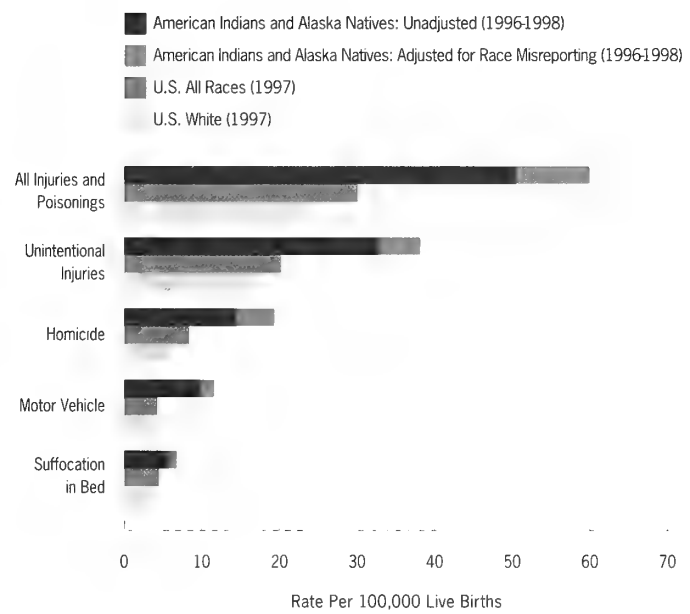


TABLE 1 INFANT MORTALITY RATES BY INJURY AND POISONING CAUSES

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Live Births)

Cause of Infant Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>2</sup>	Rate <sup>1</sup> Unadjusted	Rate <sup>1</sup> Adjusted <sup>2</sup>	Rate	Rate	U.S. All Races	U.S. White
All Injuries and Poisonings	52	62	50.4	60.1	30.1	24.6	2.0	2.4
Unintentional Injuries (Accidents)	34	39	32.9	37.8	20.2	17.1	1.9	2.2
Motor vehicle	10	12	9.7	11.6	4.3	4.0	2.7	2.9
Suffocation in bed	6	7	5.8	6.8	4.5	3.5	1.5	1.9
Accidental hanging	4	4	3.9	3.9	3.1	2.7	1.3	1.4
Drowning	2	3	1.9	2.9	1.6	1.5	1.8	1.9
Ingestion of food or other object causing suffocation	3 <sup>3</sup>	2 <sup>3</sup>	2.9	1.9	2.0	1.7	1.0	1.1
Falls	2	2	1.9	1.9	0.3	0.3	6.5	6.5
Fires/burns	1	2	1.0	1.9	1.4	1.1	1.4	1.8
Suffocation in plastic bag	1	1	1.0	1.0	0.3	0.2	3.2	4.8
Hunger, thirst, exposure, neglect	1	1	1.0	1.0	0.1	0.1	9.7	9.7
Other unintentional injuries	4	5	3.9	4.8	2.5	2.2	1.9	2.2
Homicide	15	20	14.5	19.4	8.4	6.3	2.3	3.1
Other Injuries and Poisonings	3	3	2.9	2.9	1.5	1.3	1.9	2.2

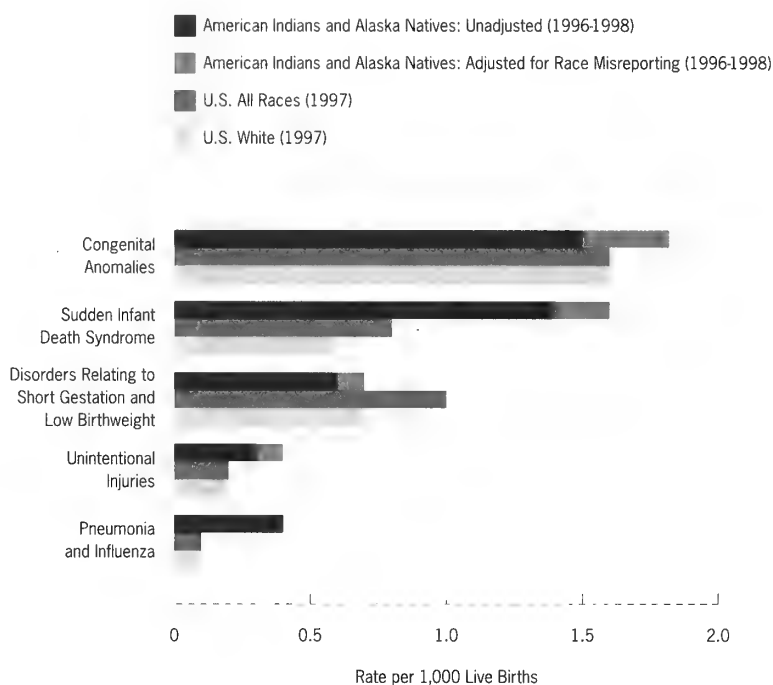
<sup>1</sup> Rates based on a small number of deaths should be interpreted with caution.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on state death certificates.

<sup>3</sup> There was one more infant death due to ingestion of food or other object causing suffocation on the unadjusted mortality file (1996-1998) than on the adjusted (linked birth/infant death record) file (1996-1998).

**CHART 2** LEADING CAUSES OF INFANT DEATH (BIRTHS TO UNDER 1 YEAR)

Unintentional injuries is the fourth leading cause of infant deaths among AI/AN. For every 100 AI/AN infant deaths, about 4 deaths are attributable to unintentional injuries. Unintentional injuries is not among the top five leading causes of infant deaths for either the U.S. all-races or white populations. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



NOTE: AI/AN unadjusted and adjusted rates for Pneumonia and Influenza cause of death are the same.

**TABLE 2** LEADING CAUSES OF INFANT DEATH

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 1,000 Live Births)

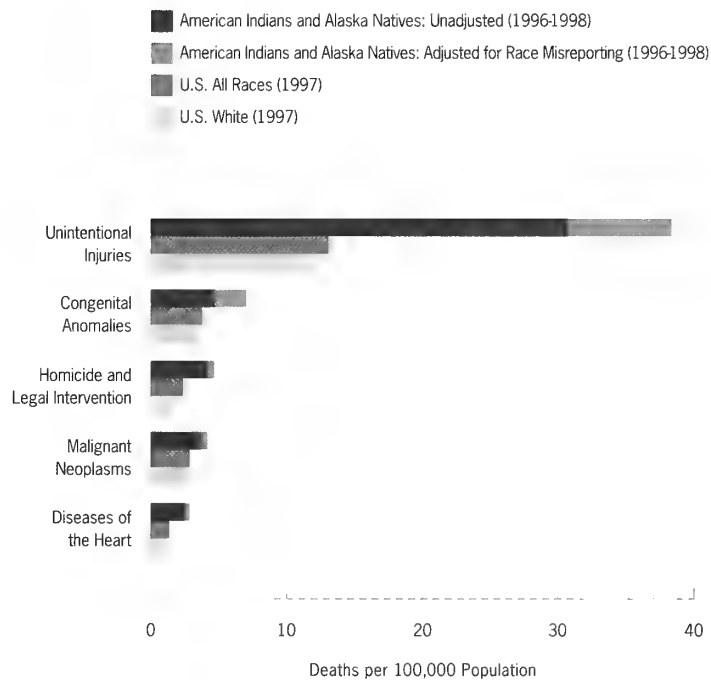
Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	780	916	7.6	8.9	7.2	6.0	1.2	1.5
Congenital anomalies	150	181	1.5	1.8	1.6	1.6	1.1	1.1
Sudden infant death syndrome	148	166	1.4	1.6	0.8	0.6	2.0	2.7
Disorders relating to short gestation and low birthweight	57	73	0.6	0.7	1.0	0.7	0.7	1.0
Unintentional injuries	34	39	0.3	0.4	0.2	0.2	2.0	2.0
Pneumonia and influenza	37	38	0.4	0.4	0.1	0.1	4.0	4.0
Respiratory distress syndrome	26	31	0.3	0.3	0.3	0.3	1.0	1.0
Newborns affected by complications of placenta, cord, and membranes	25	27	0.2	0.3	0.2	0.2	1.5	1.5
Infections specific to the perinatal period	16	22	0.2	0.2	0.2	0.2	1.0	1.0
Newborns affected by maternal complications of pregnancy	17	20	0.2	0.2	0.3	0.3	0.7	0.7
Homicide	15	20	0.1	0.2	0.1	0.1	2.0	2.0
All other causes	255	299						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

**CHART 3** DEATH RATES, LEADING CAUSES: AGES 1 TO 4 YEARS

Unintentional injuries is the leading cause of death for children, 1 to 4 years of age, in the AI/AN population as well as the U.S. all-races and white populations. About one-half of all AI/AN deaths in this age group are caused by unintentional injuries. Homicide and legal intervention is the third leading cause of death for AI/AN in this age group, while it is fourth for U.S. all-races and whites. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 3** TEN LEADING CAUSES OF DEATH FOR DECEDENTS 1 TO 4 YEARS OF AGE

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

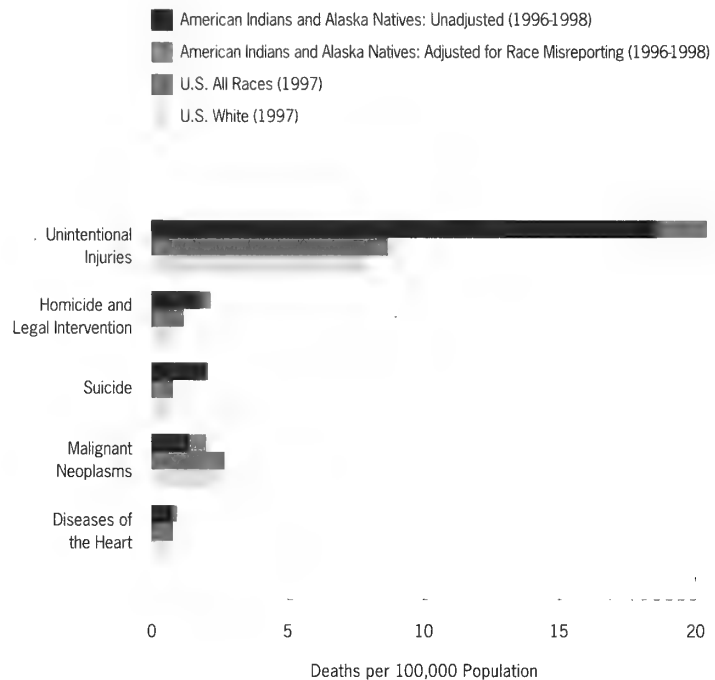
Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	251	315	62.2	78.1	35.8	31.6	2.2	2.5
Unintentional injuries	124	156	30.7	38.7	13.1	11.8	3.0	3.3
Motor vehicle	68	80	16.9	19.8	5.0	4.5	4.0	4.4
Other unintentional injuries	56	76	13.9	18.8	8.1	7.3	2.3	2.6
Congenital anomalies	19	29	4.7	7.2	3.8	3.6	1.9	2.0
Homicide and legal intervention	17	19	4.2	4.7	2.4	1.7	2.0	2.8
Malignant neoplasms	15	17	3.7	4.2	2.9	2.8	1.4	1.5
Diseases of the heart	10	12	2.5	3.0	1.4	1.2	2.1	2.5
Pneumonia and influenza	7	8	1.7	2.0	1.2	1.0	1.7	2.0
Meningitis	3	3	0.7	0.7	0.3	0.2	2.3	3.5
Acute bronchitis and bronchiolitis	2	2	0.5	0.5	0.1	0.1	5.0	5.0
Chronic obstructive pulmonary diseases and allied conditions	2	2	0.5	0.5	0.3	0.1	1.7	5.0
Abdominal hernia	1	2	0.2	0.5	0.1	0.1	5.0	5.0
All other causes	51	65						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

# CHART 4 DEATH RATES, LEADING CAUSES: AGES 5 TO 14 YEARS

Unintentional injuries is the leading cause of death for children, 5 to 14 years of age, in the AI/AN population as well as the U.S. all-races and white populations. Over one-half of all AI/AN deaths in this age group are caused by unintentional injuries. Homicide and legal intervention and suicide are the second and third leading causes for AI/AN in this age group. For U.S. all-races, homicide and legal intervention and congenital anomalies are third and suicide and diseases of the heart are fourth. For U.S. whites, homicide and legal intervention and suicide are fourth. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 4 TEN LEADING CAUSES OF DEATH FOR DECEDENTS 5 TO 14 YEARS OF AGE**

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	291	326	31.5	35.3	20.8	18.9	1.7	1.9
Unintentional injuries	172	189	18.6	20.5	8.7	8.0	2.4	2.6
Motor vehicle	94	104	10.2	11.3	5.1	4.9	2.2	2.3
Other unintentional injuries	78	85	8.5	9.2	3.6	3.1	2.6	3.0
Homicide and legal intervention	17	21	1.8	2.3	1.2	0.8	1.9	2.9
Suicide	18	19	2.0	2.1	0.8	0.8	2.6	2.6
Malignant neoplasms	13	18	1.4	2.0	2.7	2.7	0.7	0.7
Diseases of the heart	7	8	0.8	0.9	0.8	0.7	1.1	1.3
Pneumonia and influenza	4	7	0.4	0.8	0.4	0.3	2.0	2.7
Chronic obstructive pulmonary diseases and allied conditions	6	7	0.6	0.8	0.3	0.2	2.7	4.0
Congenital anomalies	5	5	0.5	0.5	1.2	1.1	0.4	0.5
Benign neoplasms	3	3	0.3	0.3	0.2	0.2	1.5	1.5
Meningococcal infection	1	1	0.1	0.1	0.1	0.1	1.0	1.0
All other causes	45	48						

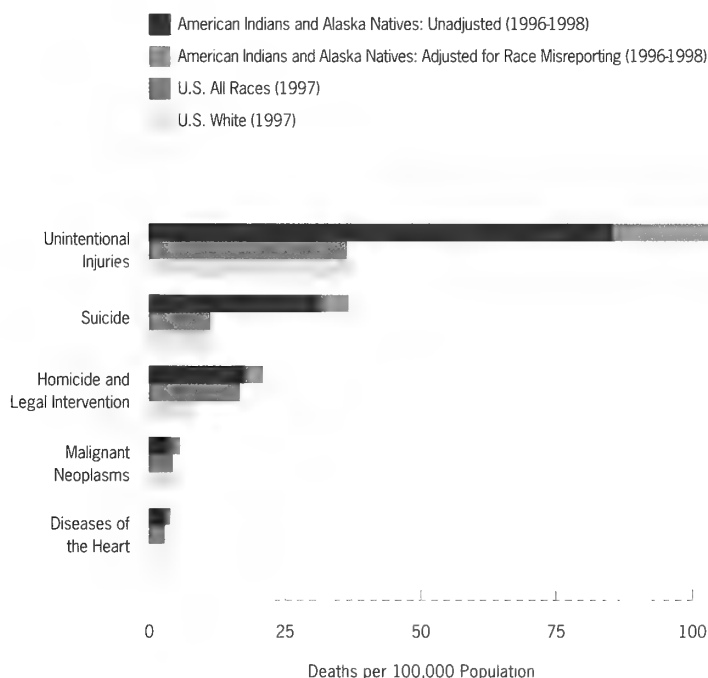
<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.



**CHART 5** DEATH RATES, LEADING CAUSES: AGES 15 TO 24 YEARS

Unintentional injuries is the leading cause of death for persons, 15 to 24 years of age, in the AI/AN population as well as the U.S. all-races and white populations. Over one-half of all AI/AN deaths in this age group are caused by unintentional injuries. Suicide and homicide and legal intervention are the second and third leading causes for AI/AN and U.S. whites in this age group. For U.S. all-races, the order is reversed. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 5** TEN LEADING CAUSES OF DEATH FOR DECEDENTS 15 TO 24 YEARS OF AGE

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	1,206	1,474	158.2	193.4	86.2	77.5	2.2	2.5
Unintentional injuries	652	810	85.5	106.3	36.5	38.3	2.9	2.8
Motor vehicle	497	632	65.2	82.9	27.9	29.5	3.0	2.8
Other unintentional injuries	155	178	20.3	23.4	8.6	8.8	2.7	2.7
Suicide	242	285	31.7	37.4	11.4	11.9	3.3	3.1
Homicide and legal intervention	136	162	17.8	21.3	16.8	8.3	1.3	2.6
Malignant neoplasms	31	39	4.1	5.1	4.5	4.4	1.1	1.2
Diseases of the heart	24	31	3.1	4.1	3.0	2.5	1.4	1.6
Congenital anomalies	10	14	1.3	1.8	1.1	1.1	1.6	1.6
Pneumonia and influenza	9	11	1.2	1.4	0.6	0.5	2.3	2.8
Chronic obstructive pulmonary diseases and allied conditions	5	6	0.7	0.8	0.5	0.4	1.6	2.0
Cerebrovascular diseases	5	5	0.7	0.7	0.5	0.5	1.4	1.4
Chronic liver disease and cirrhosis	3	5	0.4	0.7	0.1	0.0	7.0	*
All other causes	89	106						

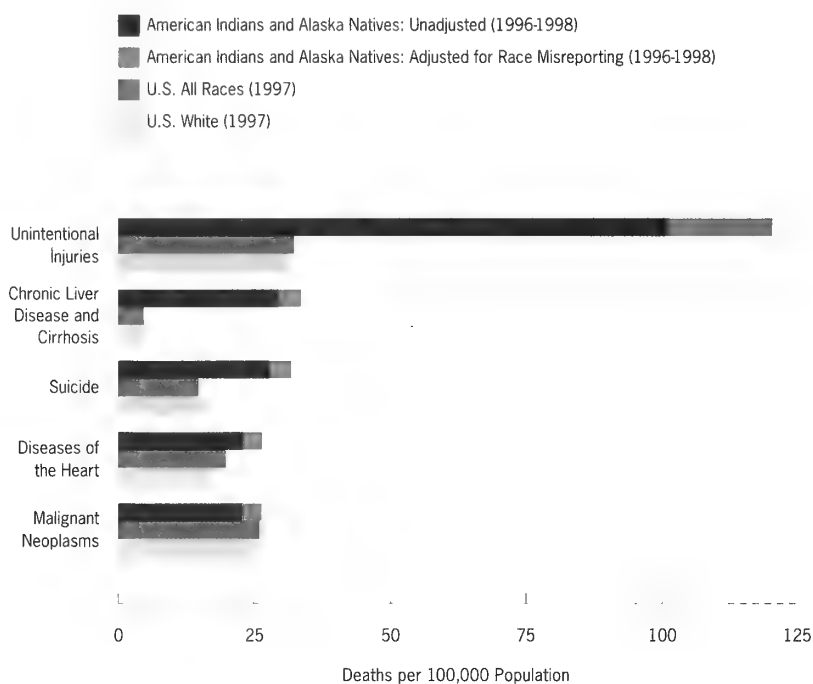
\* Figure does not meet standards of reliability or precision.

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

## CHART 6 DEATH RATES, LEADING CAUSES: AGES 25 TO 44 YEARS

Unintentional injuries is the leading cause of death for persons, 25 to 44 years of age, in the AI/AN population as well as the U.S. all-races and white populations. About one-third of all AI/AN deaths in this age group are caused by unintentional injuries. Suicide and homicide and legal intervention are the third and sixth leading causes for AI/AN in this age group. For U.S. all-races and U.S. whites, suicide is fourth and homicide and legal intervention is sixth. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 6** TEN LEADING CAUSES OF DEATH FOR DECEDENTS 25 TO 44 YEARS OF AGE

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

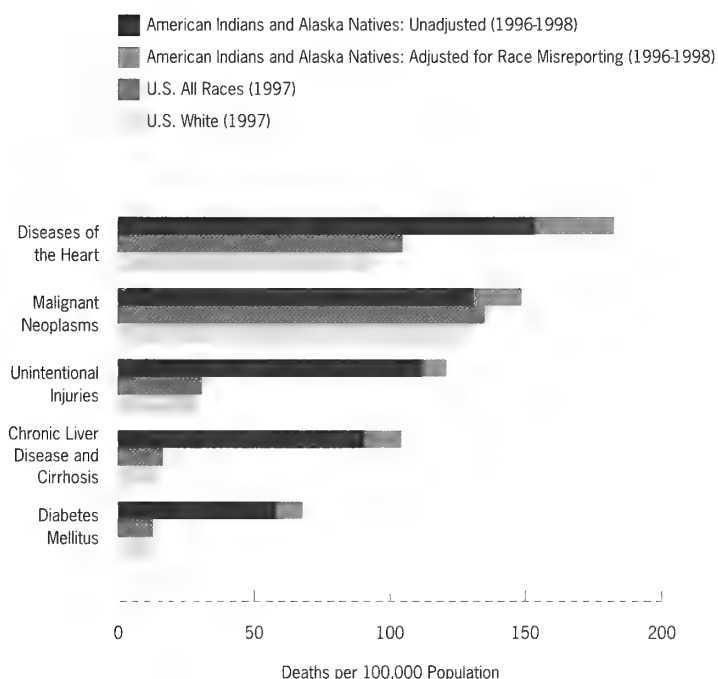
Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	3,906	4,556	307.0	358.1	161.4	142.0	2.2	2.5
Unintentional injuries	1,286	1,515	101.1	119.1	32.4	31.8	3.7	3.7
Motor vehicle	772	920	60.7	72.3	16.9	16.6	4.3	4.4
Other unintentional injuries	514	595	40.4	46.8	15.5	15.2	3.0	3.1
Chronic liver disease and cirrhosis	374	436	29.4	34.3	4.8	4.8	7.1	7.1
Suicide	354	408	27.8	32.1	14.8	16.0	2.2	2.0
Diseases of the heart	291	340	22.9	26.7	19.8	17.2	1.3	1.6
Malignant neoplasms	289	332	22.7	26.1	26.0	24.6	1.0	1.1
Homicide and legal intervention	245	284	19.3	22.3	10.5	6.3	2.1	3.5
Human immunodeficiency virus (HIV) infection	92	110	7.2	8.6	13.2	7.8	0.7	1.1
Diabetes mellitus	87	97	6.8	7.6	3.0	2.5	2.5	3.0
Pneumonia and influenza	83	95	6.5	7.5	2.3	1.9	3.3	3.9
Cerebrovascular diseases	64	74	5.0	5.8	4.1	3.2	1.4	1.8
All other causes	741	865						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

**CHART 7** DEATH RATES, LEADING CAUSES: AGES 45 TO 54 YEARS

Unintentional injuries is the third leading cause of death for persons, 45 to 54 years of age, in the AI/AN population as well as the U.S. all-races and white populations. For every 100 AI/AN deaths in this age group, 14 deaths are attributable to unintentional injuries. Suicide is the fourth leading cause for U.S. white in this age group. Suicide and homicide and legal intervention are not among the top five leading causes for either the AI/AN or U.S. all-races populations. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 7** TEN LEADING CAUSES OF DEATH FOR DECEDENTS 45 TO 54 YEARS OF AGE

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

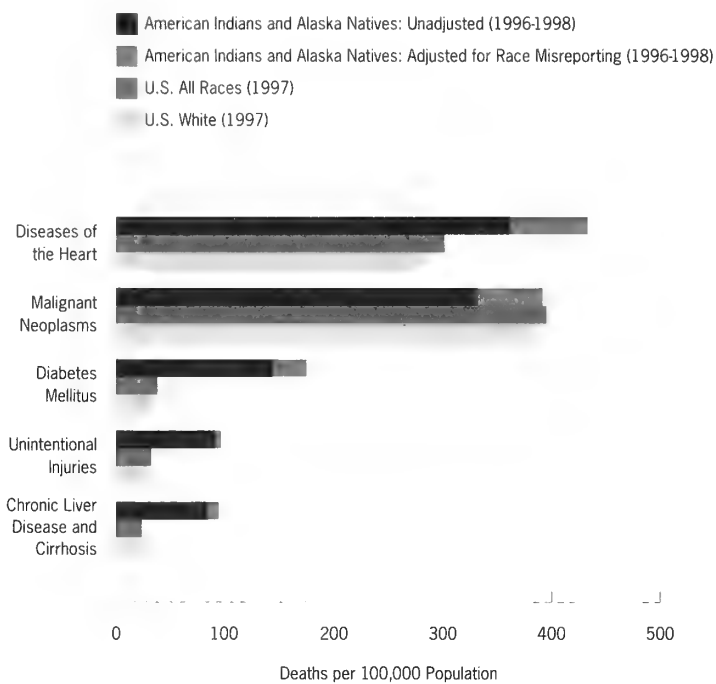
Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	2,704	3,087	795.3	908.9	430.8	389.3	2.1	2.3
Diseases of the heart	521	618	153.2	181.8	104.9	94.6	1.7	1.9
Malignant neoplasms	445	509	130.9	149.7	135.1	128.7	1.1	1.2
Unintentional injuries	380	421	111.8	123.8	31.0	29.2	4.0	4.2
Motor vehicle	195	215	57.4	63.3	14.3	13.8	4.4	4.6
Other unintentional injuries	185	206	54.4	60.6	16.7	15.4	3.6	3.9
Chronic liver disease and cirrhosis	309	360	90.9	105.9	16.7	15.9	6.3	6.7
Diabetes mellitus	198	236	58.2	69.4	12.9	10.7	5.4	6.5
Cerebrovascular diseases	82	89	24.1	26.2	16.9	13.1	1.6	2.0
Pneumonia and influenza	70	74	20.6	21.8	6.6	5.6	3.3	3.9
Homicide and legal intervention	53	56	15.6	16.5	5.6	4.0	2.9	4.1
Suicide	47	52	13.8	15.3	14.7	16.1	1.0	1.0
Nephritis, nephrotic syndrome, and nephrosis	35	38	10.3	11.2	2.6	1.9	4.3	5.9
All other causes	564	634						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

**CHART 8** DEATH RATES, LEADING CAUSES: AGES 55 TO 64 YEARS

Unintentional injuries is the fourth leading cause of death for persons, 55 to 64 years of age, in the AI/AN population. For every 100 AI/AN deaths in this age group, 6 deaths are attributable to unintentional injuries. Unintentional injuries is the sixth leading cause of death for this age group in the U.S. all-races and white populations. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 8** TEN LEADING CAUSES OF DEATH FOR DECEDENTS 55 TO 64 YEARS OF AGE

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

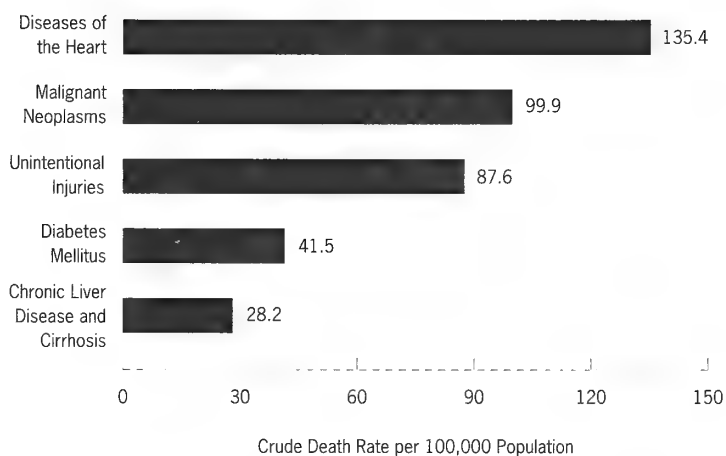
Cause of Death	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	3,295	3,834	1,410.9	1,641.7	1,063.6	1,000.5	1.5	1.6
Diseases of the heart	844	1,019	361.4	436.3	302.4	282.3	1.4	1.5
Malignant neoplasms	776	912	332.3	390.5	395.7	384.3	1.0	1.0
Diabetes mellitus	335	408	143.4	174.7	38.4	32.1	4.5	5.4
Unintentional injuries	212	229	90.8	98.1	32.6	31.0	3.0	3.2
Motor vehicle	100	109	42.8	46.7	15.3	14.8	3.1	3.2
Other unintentional injuries	112	120	48.0	51.4	17.3	16.2	3.0	3.2
Chronic liver disease and cirrhosis	196	225	83.9	96.3	24.1	23.6	4.0	4.1
Cerebrovascular diseases	131	142	56.1	60.8	44.4	36.9	1.4	1.6
Chronic obstructive pulmonary diseases and allied conditions	91	106	39.0	45.4	46.3	47.8	1.0	0.9
Pneumonia and influenza	64	68	27.4	29.1	17.2	15.6	1.7	1.9
Nephritis, nephrotic syndrome, and nephrosis	46	50	19.7	21.4	8.4	6.4	2.5	3.3
Septicemia	38	40	16.3	17.1	8.5	6.8	2.0	2.5
All other causes	562	635						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

**CHART 9** DEATH RATES FOR LEADING CAUSES: ALL AGES, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

Unintentional injuries is the third leading cause of death, all ages, for the AI/AN population. For every 100 AI/AN deaths, 14 deaths are attributable to unintentional injuries. Unintentional injuries is the fifth leading cause of death in the U.S. all-races and white populations. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 9** TEN LEADING CAUSES OF DEATH FOR DECEDENTS OF ALL AGES

American Indians and Alaska Natives, IHS Service Area, 1996-1998  
(Rate per 100,000 Population)

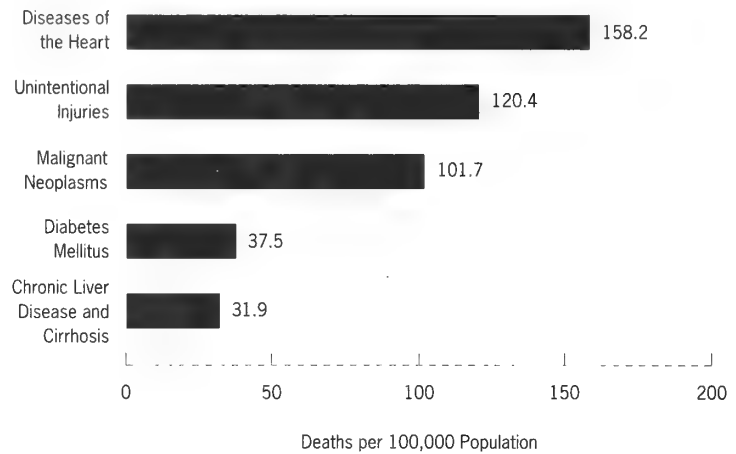
Cause of Death	Number		Rate	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
All Causes	23,508	26,967	547.7	698.1
Diseases of the heart	4,967	5,810	115.7	135.4
Malignant neoplasms	3,737	4,289	87.1	99.9
Unintentional injuries	3,245	3,761	75.6	87.6
Motor vehicle	1,855	2,197	43.2	51.2
Other unintentional injuries	1,390	1,564	32.4	36.4
Diabetes mellitus	1,511	1,780	35.2	41.5
Chronic liver disease and cirrhosis	1,053	1,209	24.5	28.2
Cerebrovascular diseases	1,061	1,164	24.7	27.1
Pneumonia and influenza	845	913	19.7	21.3
Suicide	711	818	16.6	19.1
Chronic obstructive pulmonary diseases	675	752	15.7	17.5
Homicide and legal intervention	514	593	12.0	13.8
All other causes	5,189	5,878		

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths.

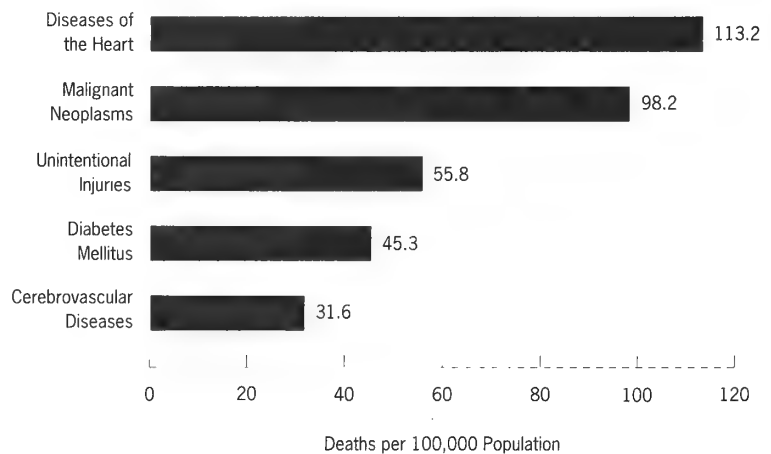
**CHART 10.1** DEATH RATES FOR LEADING CAUSES: MALES, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

Unintentional injuries is the second leading cause of death, all ages, for AI/AN and fourth for U.S. all-races and white males. For every 100 AI/AN male deaths, 17 deaths are attributable to unintentional injuries. Suicide is the sixth leading cause for AI/AN males and eighth for U.S. all-races and white male populations. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**CHART 10.2** DEATH RATES FOR LEADING CAUSES: FEMALES, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

Unintentional injuries is the third leading cause of death, all ages, for AI/AN females. For every 100 AI/AN female deaths, 10 deaths are attributable to unintentional injuries. For U.S. white females, unintentional injuries is sixth and for U.S. all-races females, it is seventh. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 10 LEADING CAUSES OF DEATH BY SEX**

American Indians and Alaska Natives, IHS Service Area, 1996-1998  
(Rate per 100,000 Population)

Male				
Cause of Death	Number		Rate	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
All Causes	13,155	15,034	622.0	710.7
Diseases of the heart	2,838	3,345	134.2	158.2
Unintentional injuries	2,230	2,546	105.5	120.4
Motor vehicle	1,220	1,409	57.7	66.6
Other unintentional injuries	1,010	1,137	47.8	53.8
Malignant neoplasms	1,884	2,151	89.1	101.7
Diabetes mellitus	680	794	32.2	37.5
Chronic liver disease and cirrhosis	599	675	28.3	31.9
Suicide	573	643	27.1	30.4
Pneumonia and influenza	462	500	21.8	23.6
Cerebrovascular diseases	435	476	20.6	22.5
Homicide and legal intervention	393	443	18.6	20.9
Chronic obstructive pulmonary diseases and allied conditions	380	425	18.0	20.1
All other causes	2,681	3,036		

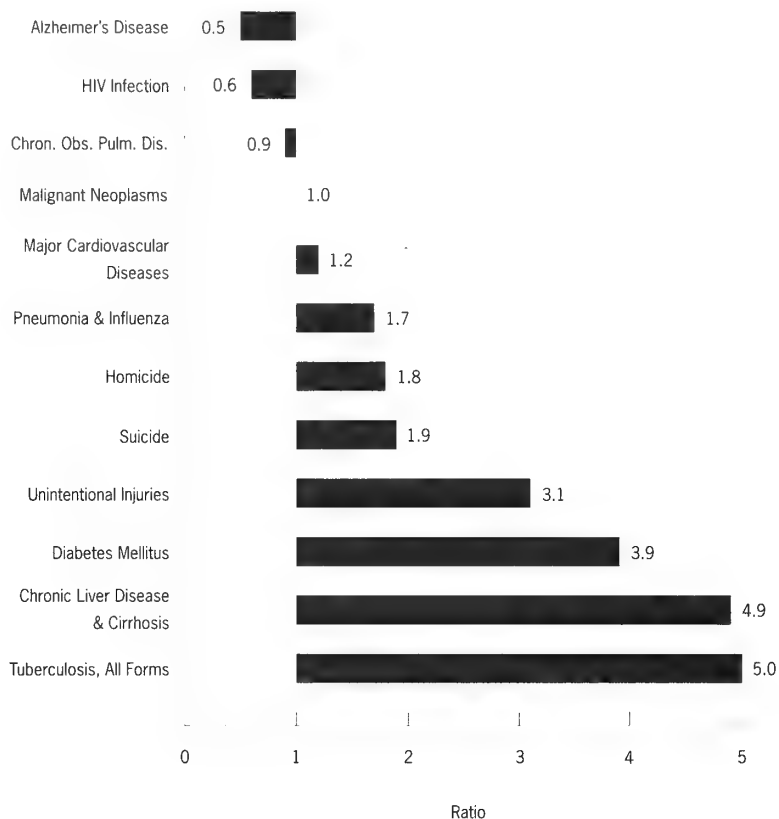
Female				
Cause of Death	Number		Rate	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
All Causes	10,353	11,933	475.5	548.1
Diseases of the heart	2,129	2,465	97.8	113.2
Malignant neoplasms	1,853	2,138	85.1	98.2
Unintentional injuries	1,015	1,215	46.7	55.8
Motor vehicle	635	788	29.2	36.2
Other unintentional injuries	380	427	17.5	19.6
Diabetes mellitus	831	986	38.2	45.3
Cerebrovascular diseases	626	688	28.8	31.6
Chronic liver disease and cirrhosis	454	534	20.9	24.5
Pneumonia and influenza	383	413	17.6	19.0
Chronic obstructive pulmonary diseases and allied conditions	295	327	13.5	15.0
Nephritis, nephrotic syndrome, and nephrosis	172	186	7.9	8.5
Suicide	138	175	6.3	8.0
All other causes	2,457	2,806		

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Causes of death listed are based on the order of adjusted number of deaths. During 1996-98 there were 103 male deaths and 27 female deaths (adjusted counts) due to HIV infection among the AI/AN population residing in the IHS service delivery area. re based on the order of adjusted number of deaths.

**CHART 11** SELECTED AGE-ADJUSTED DEATH RATES, RATIO OF AMERICAN INDIANS AND ALASKA NATIVES (1996-1998) TO U.S. ALL-RACES (1997)

The AI/AN population has considerably higher age-adjusted death rates for unintentional injuries, suicide, and homicide and legal intervention than the U.S. all-races and white populations. The AI/AN age-adjusted unintentional injury death rate is 3.1 times the U.S. all-races rate and 3.2 times the U.S. white rate. For suicide, these relationships are 1.9 times and 1.8 times, and for homicide and legal intervention, they are 1.8 times and 3.1 times. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.





**TABLE 11** AGE-ADJUSTED DEATH RATES

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

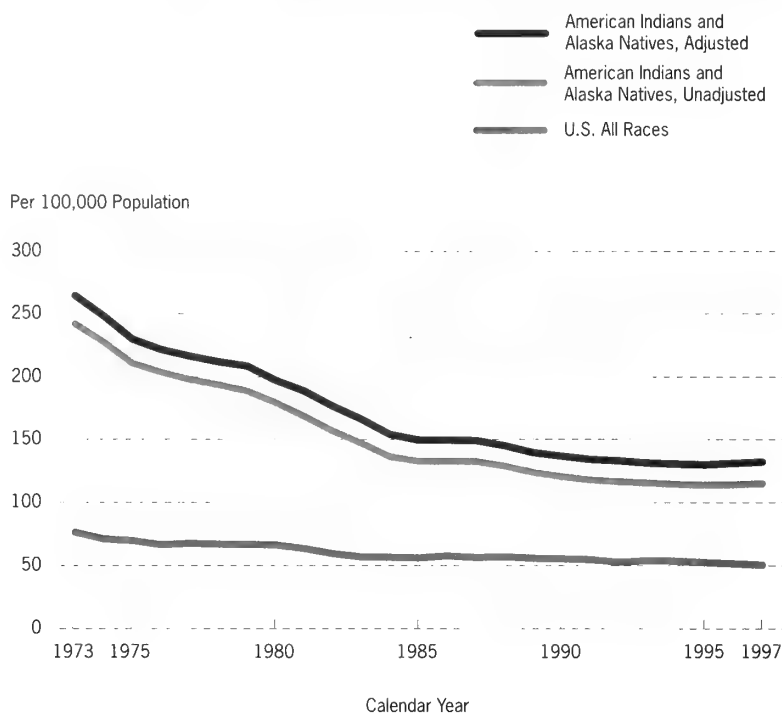
Cause of Death	American Indian and Alaska Native		U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	620.7	715.2	479.1	456.5	1.5	1.6
Major cardiovascular diseases	168.4	195.9	166.1	159.1	1.2	1.2
Diseases of the heart	132.9	157.1	130.5	125.9	1.2	1.2
Cerebrovascular diseases	26.7	29.5	25.9	24.0	1.1	1.2
Atherosclerosis	2.4	2.5	2.1	2.1	1.2	1.2
Hypertension	2.4	2.5	2.3	1.9	1.1	1.3
Unintentional injuries	82.2	94.7	30.1	29.6	3.1	3.2
Motor vehicle	46.6	54.8	15.9	15.9	3.4	3.4
Other unintentional injuries	35.6	39.9	14.2	13.7	2.8	2.9
Malignant neoplasms	107.5	124.0	125.6	122.9	1.0	1.0
Chronic liver disease and cirrhosis	31.7	36.4	7.4	7.3	4.9	5.0
Diabetes mellitus	44.4	52.8	13.5	11.9	3.9	4.4
Pneumonia and influenza	19.8	21.5	12.9	12.4	1.7	1.7
Suicide	17.6	20.2	10.6	11.3	1.9	1.8
Homicide	12.7	14.5	8.0	4.7	1.8	3.1
Chronic obstructive pulmonary diseases and allied conditions	17.5	19.7	21.1	21.7	0.9	0.9
Tuberculosis, all forms	1.5	1.5	0.3	0.2	5.0	7.5
Human immunodeficiency virus (HIV) infection	2.9	3.3	5.8	3.3	0.6	1.0
Alzheimer's disease	1.0	1.3	2.7	2.9	0.5	0.4

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

SOURCE: U.S. Mortality Rates: Monthly Vital Statistics Report, NCHS, DHHS, Advance Report of Final Mortality Statistics, 1997, Vol. 47, No. 19, June 30, 1999, Table 14.

**CHART 12** AGE-ADJUSTED INJURY AND POISONING DEATH RATES

The AI/AN age-adjusted death rate due to injury and poisoning (unintentional injury, suicide, homicide, firearm injury, and other injury) have decreased 50 percent since 1972-74. Despite the improvements, the 1996-98 AI/AN rate (132.0) is still 2.6 times the 1997 U.S. all-races rate (50.2) and 180 percent greater than the 1997 U.S. white rate (47.1). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 12** INJURY AND POISONING<sup>1</sup> DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>2</sup> to:	
	Number Unadjusted	Number Adjusted <sup>2</sup>	Rate Unadjusted	Rate Adjusted <sup>2</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	1,541	1,790						
1996-1998 (1997)	1,549	1,801	114.7	132.0	50.2	47.1	2.6	2.8
1995-1997 (1996)	1,470	1,686	114.0	130.9	51.2	47.9	2.6	2.7
1994-1996 (1995)	1,450	1,669	113.6	129.7	52.2	49.0	2.5	2.6
1993-1995 (1994)	1,464	1,665	114.2	130.3	53.3	48.4	2.4	2.7
1992-1994 (1993)	1,403	1,609	115.3	131.1	53.8	48.9	2.4	2.7
1991-1993 (1992)	1,369	1,564	116.3	132.9	52.4	48.0	2.5	2.8
1990-1992 (1991)	1,397	1,610	117.6	134.0	54.5	49.8	2.5	2.7
1989-1991 (1990)	1,349	1,532	120.3	136.6	55.1	50.8	2.5	2.7
1988-1990 (1989)	1,367	1,548	123.6	139.4	55.6	50.9	2.5	2.7
1987-1989 (1988)	1,391	1,567	128.7	144.9	56.7	52.7	2.6	2.7
1986-1988 (1987)	1,390	1,568	132.4	149.0	56.2	52.8	2.7	2.8
1985-1987 (1986)	1,375	1,551	132.5	149.3	57.4	54.1	2.6	2.8
1984-1986 (1985)	1,275	1,440	132.5	149.3	55.8	53.0	2.7	2.8
1983-1985 (1984)	1,254	1,411	136.1	153.8	56.3	53.7	2.7	2.9
1982-1984 (1983)	1,280	1,455	146.9	166.0	56.6	53.6	2.9	3.1
1981-1983 (1982)	1,351	1,520	156.6	176.3	59.2	55.9	3.0	3.2
1980-1982 (1981)	1,344	1,494	168.3	188.4	63.2	59.5	3.0	3.2
1979-1981 (1980)	1,418	1,588	179.2	196.9	66.1	61.9	3.0	3.2
1978-1980 (1979)	1,472	1,611	188.4	208.3	66.4	62.1	3.1	3.4
1977-1979 (1978)	1,383	1,525	193.3	211.6	66.7	62.6	3.2	3.4
1976-1978 (1977)	1,346	1,464	197.6	216.1	67.3	62.8	3.2	3.4
1975-1977 (1976)	1,321	1,441	203.4	221.3	66.2	63.8	3.3	3.5
1974-1976 (1975)	1,283	1,392	210.4	229.6	69.5	63.8	3.3	3.6
1973-1975 (1974)	1,229	1,345	227.3	248.0	70.8	64.6	3.5	3.8
1972-1974 (1973)	1,381	1,504	241.7	264.2	76.1	69.4	3.5	3.8
(1972)	1,241	1,353						
1954-1956 (1955)	2,273		200.3		69.2	51.9		

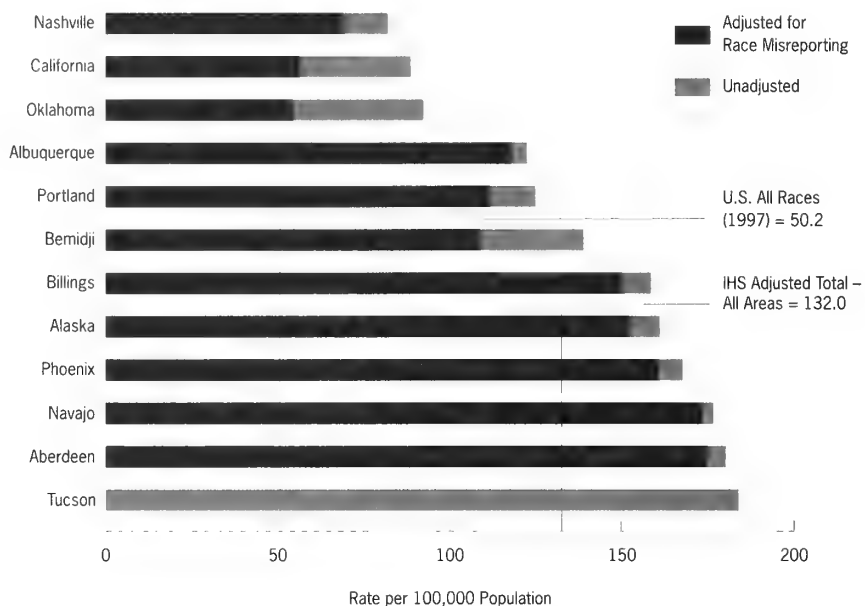
<sup>1</sup> Includes the following deaths and ICD-9 codes: motor vehicle unintentional injuries—E-810-E825; other unintentional injuries—E800-E807, E826-E949; suicide—E950-E959; homicide—E960-E978; injury undetermined whether unintentionally or purposely inflicted—E980-E989; and injury resulting from operations of war—E990-E999.

<sup>2</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Reservation State data for 1955, the year IHS was established, are presented above. Data from 1972 forward are drawn from specific counties in the IHS service area. Reservation State data and county data are not directly comparable. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 13** AGE-ADJUSTED INJURY AND POISONING DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The AI/AN age-adjusted death rate due to injury and poisoning (unintentional injury, suicide, homicide, firearm injury, and other injury) varies considerably among the IHS Areas. The highest Area rate (Tucson, 183.9) is 3.7 times the U.S. all-races rate (50.2). The Nashville Area rate (82.2) which is the lowest among the IHS areas is 1.6 times the U.S. all-races rate. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.





**TABLE 13** AGE-ADJUSTED INJURY AND POISONING<sup>1</sup> DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

	Death <sup>2</sup>		Rate <sup>3</sup>	
	Unadjusted	Adjusted <sup>4</sup>	Unadjusted	Adjusted <sup>4</sup>
U.S. All Races (1997)	146,400		50.2	
All IHS Areas	4,560	5,277	114.7	132.0
Aberdeen	425	439	174.8	180.2
Alaska	423	448	152.1	161.1
Albuquerque	264	275	118.1	122.5
Bemidji	252	327	108.9	139.0
Billings	217	230	150.1	158.5
California	200	318	56.5	88.8
Nashville	149	179	69.4	82.2
Navajo	949	967	173.2	176.6
Oklahoma	465	790	54.4	92.5
Phoenix	600	629	160.5	167.7
Portland	475	535	111.7	125.0
Tucson	141 <sup>5</sup>	140 <sup>5</sup>	184.6 <sup>5</sup>	183.9 <sup>5</sup>

<sup>1</sup> Includes the following ICD-9 cause of death groups combined: Motor vehicle accidents—E810-E825. Other accidents—E800-E807, E826-E949. Suicide—E950-E959. Homicide—E960-E978. Injury undetermined whether accidentally or purposely inflicted—E980-E989. Injury resulting from operations of war—E990-E999.

<sup>2</sup> Includes two deaths with age not reported. Both deaths were in the Tucson Area.

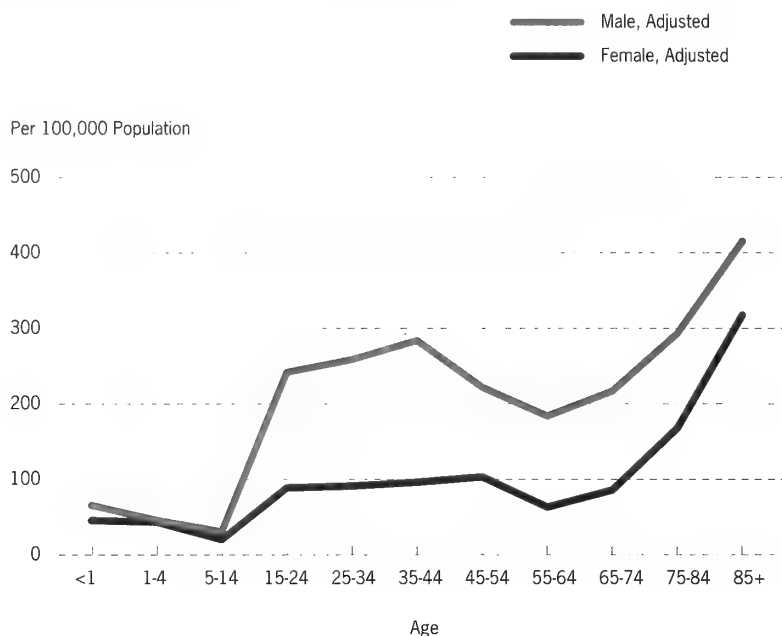
<sup>3</sup> Age-adjusted rate per 100,000 population.

<sup>4</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

<sup>5</sup> The adjusted number and rate for Tucson is lower than the unadjusted number and rate because the linked birth/infant death files (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1996-1998) for this Area.

**CHART 14** INJURY AND POISONING DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN males are much more likely to die from injury and than AI/AN females. The AI/AN male rates are almost triple the AI/AN female rates for age groups 35 to 44. The AI/AN male age groups with the highest rates are 15 through 54 and 65 and older. The AI/AN male rates are more than double the U.S. all-races male rates for age groups 1 through 74 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 14** INJURY AND POISONING DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	46.2	55.1	54.6	65.1	37.7	44.9
1-4 years	35.4	44.1	35.6	45.3	35.3	42.8
5-14 years	22.5	24.9	27.1	30.1	17.8	19.6
15-24 years	136.4	166.4	207.7	241.3	62.2	88.2
25-34 years	143.5	172.5	221.5	258.0	68.7	90.5
35-44 years	163.9	186.3	251.7	283.2	81.7	95.5
45-54 years	144.7	159.4	202.9	221.3	91.4	102.6
55-64 years	110.5	118.6	170.2	183.1	58.5	62.5
65-74 years	135.9	143.2	202.9	216.3	82.8	85.2
75-84 years	205.3	217.6	275.6	292.6	157.9	167.1
85 years +	352.6	352.6	414.6	414.6	316.8	316.8

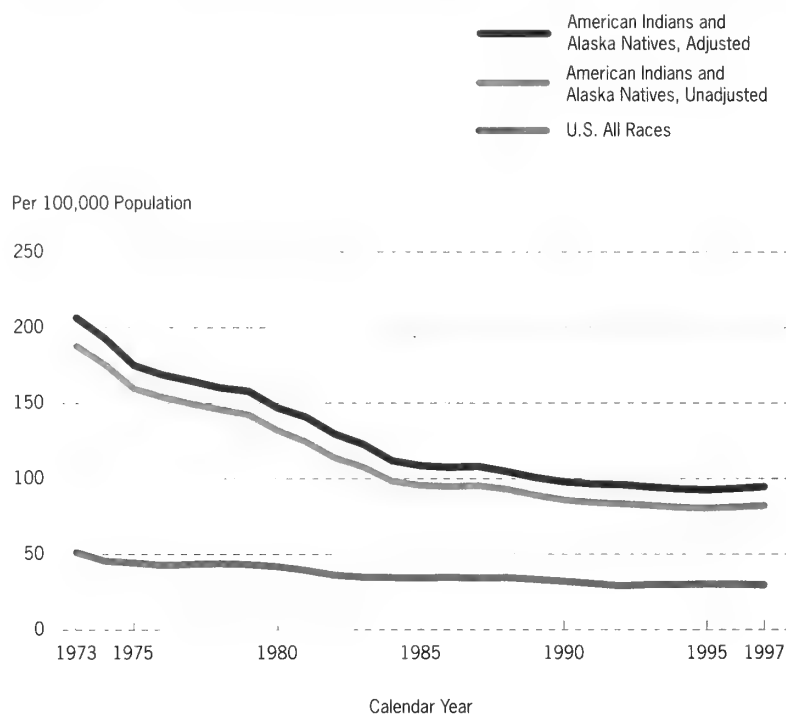
  

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	30.1	33.5	26.5	24.6	27.9	21.2
1-4 years	15.8	18.1	13.4	13.8	16.0	11.5
5-14 years	10.9	13.6	8.1	9.8	12.4	7.1
15-24 years	66.2	101.4	29.0	59.9	88.9	28.9
25-34 years	61.2	95.9	26.4	56.5	87.3	24.9
35-44 years	59.9	90.7	29.4	57.1	85.8	28.1
45-54 years	53.4	80.3	27.6	51.2	76.3	26.7
55-64 years	51.3	76.7	28.3	49.8	73.6	27.7
65-74 years	64.7	95.2	40.1	63.9	93.7	39.5
75-84 years	126.7	181.9	90.5	127.4	183.2	90.7
85 years +	302.7	431.8	250.7	311.5	446.8	257.6

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 15** AGE-ADJUSTED UNINTENTIONAL INJURY DEATH RATES

The AI/AN age-adjusted unintentional injury death rate for AI/AN has decreased over 54 percent since 1972-74. In 1972-74, the AI/AN rate (206.7) was 4.0 times the 1973 U.S. all-races rate (51.7) and 4.2 times the 1973 U.S. white rate (49.5). For 1996-98, the AI/AN rate (94.7) is 215 percent greater than the 1997 U.S. all-races rate (30.1) and 220 percent greater than the U.S. white rate (29.6). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.





**TABLE 15 UNINTENTIONAL INJURY DEATHS AND DEATH RATES**

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

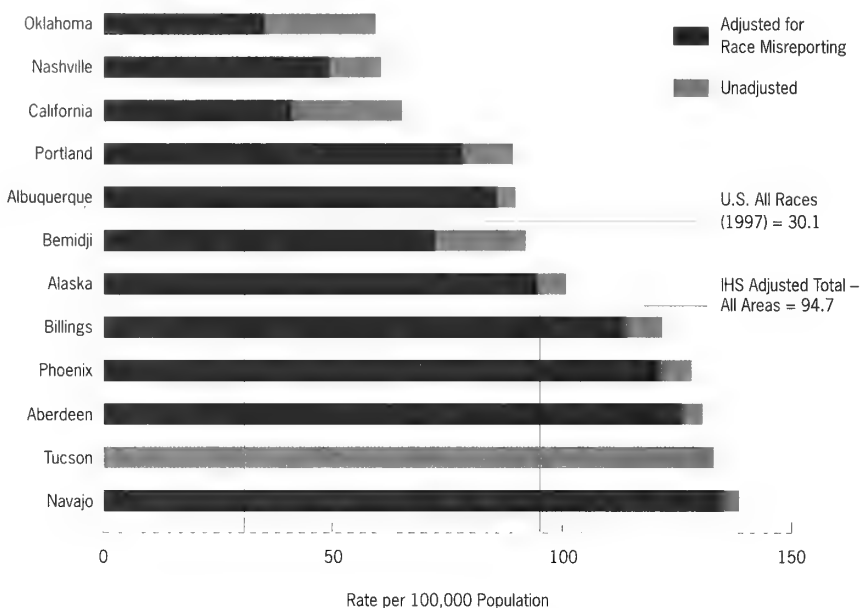
Calendar Year(s)	American Indian and Alaska Native						Ratio of American Indian and Alaska Native <sup>1</sup> to:			
	Total Deaths		All Unintentional Injuries		Motor Vehicle		U.S. All Races		U.S. White	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	All Unintentional Injuries	Motor Vehicle	All Unintentional Injuries	Motor Vehicle
(1998)	1,087	1,272								
1996-1998 (1997)	1,103	1,277	82.2	94.7	46.6	54.8	30.1	15.9	29.6	15.9
1995-1997 (1996)	1,055	1,212	81.3	93.5	46.5	54.7	30.4	16.2	29.9	16.3
1994-1996 (1995)	1,016	1,180	80.6	92.6	45.9	54.0	30.5	16.3	29.9	16.4
1993-1995 (1994)	1,022	1,173	81.1	93.3	45.4	53.4	30.3	16.1	29.5	16.2
1992-1994 (1993)	1,007	1,168	82.4	94.5	45.5	53.3	30.3	16.0	29.6	16.1
1991-1993 (1992)	977	1,126	83.4	96.1	47.0	55.4	29.4	15.8	28.8	15.9
1990-1992 (1991)	988	1,154	84.3	96.6	47.5	55.8	31.0	17.0	30.3	17.2
1989-1991 (1990)	970	1,101	86.0	98.0	48.4	56.3	32.5	18.5	31.8	18.6
1988-1990 (1989)	969	1,097	89.1	100.8	49.6	57.2	33.8	18.9	32.9	19.1
1987-1989 (1988)	1,012	1,148	93.1	104.8	52.2	59.9	35.0	19.7	34.1	20.0
1986-1988 (1987)	1,000	1,135	95.4	108.2	54.3	62.7	34.6	19.5	33.9	19.8
1985-1987 (1986)	983	1,120	94.8	107.6	54.2	62.5	35.2	19.4	34.5	19.8
1984-1986 (1985)	913	1,034	95.6	108.7	53.0	61.0	34.7	18.8	34.1	19.1
1983-1985 (1984)	921	1,049	98.4	112.0	53.2	62.2	35.0	19.1	34.6	19.6
1982-1984 (1983)	907	1,038	107.8	122.9	57.0	66.5	35.3	18.5	34.7	19.0
1981-1983 (1982)	999	1,136	113.9	129.7	62.1	72.1	36.6	19.3	36.1	19.8
1980-1982 (1981)	975	1,101	124.5	140.9	69.4	79.9	39.8	21.8	39.3	22.5
1979-1981 (1980)	1,058	1,195	132.1	147.0	75.2	85.3	42.3	22.9	41.5	23.4
1978-1980 (1979)	1,095	1,200	142.4	158.0	80.4	90.4	43.7	23.7	42.9	24.3
1977-1979 (1978)	1,071	1,189	145.9	160.3	82.4	91.3	44.3	23.4	43.3	23.8
1976-1978 (1977)	1,007	1,102	149.7	164.8	85.0	94.2	43.8	22.4	42.5	22.5
1975-1977 (1976)	995	1,093	154.1	168.9	86.9	96.0	43.2	21.5	41.8	21.5
1974-1976 (1975)	1,000	1,092	159.7	175.2	87.8	97.3	44.8	21.3	43.1	21.2
1973-1975 (1974)	921	1,009	175.7	193.0	97.3	108.4	46.0	21.8	44.3	21.7
1972-1974 (1973)	1,091	1,199	188.0	206.7	104.8	116.5	51.7	26.4	49.5	26.0
(1972)	989	1,084								
1954-1956 (1955)	714		184.0		97.6		54.3	24.6	52.2	24.3

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Reservation State data for 1955, the year IHS was established, are presented above. Data from 1972 forward are drawn from specific counties in the IHS service area. Reservation State data and county data are not directly comparable. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 16** AGE-ADJUSTED UNINTENTIONAL INJURY DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The Navajo Area has the highest age-adjusted unintentional injury death rate (138.5) among the IHS Areas. This rate is over two times higher the lowest Area rate (Oklahoma, 59.3), but over 4.6 times the U.S. all-races rate (30.1). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 16** AGE-ADJUSTED UNINTENTIONAL INJURY DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

	All Unintentional Injuries				Motor Vehicle Crashes			Other Unintentional Injuries	
	Deaths		Rate <sup>2</sup>		Totals Rate <sup>2</sup>		Percent of Motor Vehicle Crash Deaths Pedestrian-related <sup>1</sup>	Rate <sup>2</sup>	
	Unadjusted	Adjusted <sup>3</sup>	Unadjusted	Adjusted <sup>3</sup>	Unadjusted	Adjusted <sup>3</sup>		Unadjusted	Adjusted <sup>3</sup>
U.S. All Races (1997)	95,644		30.1		15.9			14.2	
All IHS Areas	3,245	3,761	82.1	94.7	46.6	54.8	19.5%	35.6	39.9
Aberdeen	300	312	125.9	130.5	73.3	77.4	11.1%	52.6	53.1
Alaska	258	275	94.6	100.8	24.4	24.7	20.0%	70.2	76.1
Albuquerque	191	201	85.6	89.8	49.9	53.9	18.9%	35.7	35.9
Bemidji	165	215	72.1	92.0	41.9	55.0	19.7%	30.2	37.0
Billings	165	177	113.8	121.7	74.4	82.5	8.2%	39.5 <sup>5</sup>	39.2 <sup>5</sup>
California	144	231	41.1	65.1	20.1	31.4	17.5%	21.0	33.7
Nashville	106	133	49.0	60.5	32.1	42.5	23.2%	16.9	18.0
Navajo	735	753	135.1	138.5	84.1	87.2	30.6%	51.0	51.3
Oklahoma	305	514	35.0	59.3	22.2	39.1	9.8%	12.8	20.2
Phoenix	446	472	121.4	128.1	72.6	77.7	23.6%	48.8	50.3
Portland	331	380	78.2	89.2	38.6	45.1	16.0%	39.6	44.1
Tucson	99 <sup>4</sup>	98 <sup>4</sup>	133.6 <sup>4</sup>	132.9 <sup>4</sup>	76.4	76.4	23.2%	57.2 <sup>5</sup>	56.5 <sup>5</sup>

<sup>1</sup> Includes Motor vehicle crashes having ICD-9 codes E810-E825 with a fourth digit code .7. The fourth digit code .7 indicates a pedestrian was the subject decedent as a result of the motor vehicle crash. Percentages are based upon adjusted numbers of deaths.

<sup>2</sup> Age-adjusted rate per 100,000 population.

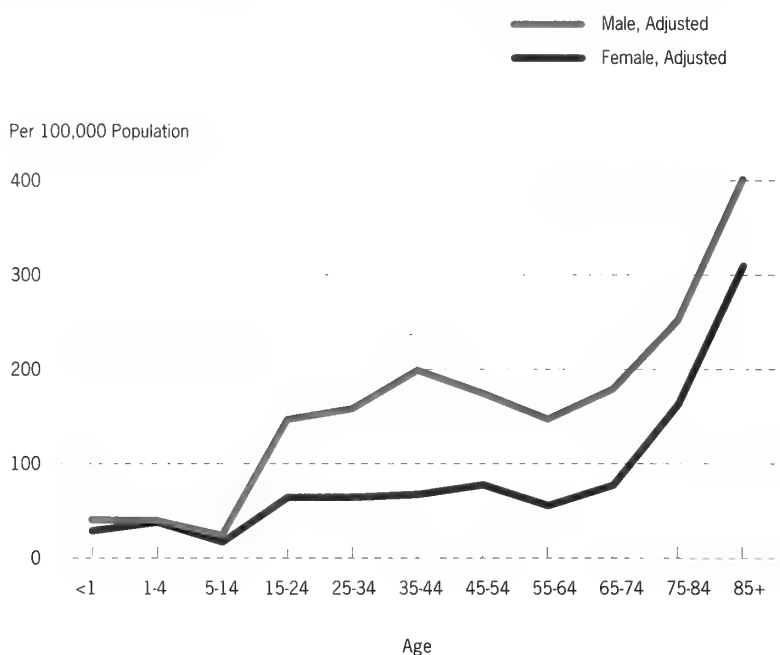
<sup>3</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

<sup>4</sup> The adjusted number and rate for Tucson (all unintentional injuries) is lower than the unadjusted number and rate because the linked birth/infant death files (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1996-1998) for this Area.

<sup>5</sup> The adjusted rates for Billings and Tucson (other unintentional injuries) are lower than the unadjusted rates because the linked birth/infant death files (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1996-1998) for these Areas.

**CHART 17** UNINTENTIONAL INJURY DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The highest unintentional injury death rates occur in the very elder population, those aged 75 and older. Excluding the very elder population (75 years and older), the highest AI/AN male rate (199.0) occurs in the 35 to 44 year age group. This is 3.2 times the comparable peak for the U.S. all-races male population (63.0 for 65 to 74 years) and 2.6 times the comparable peak for the AI/AN female population (77.3 for 45 to 54 years). The AI/AN female peak is in turn 2.3 times the comparable peak for the U.S. all-races female population (32.9 for 65 to 74 years). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 17** UNINTENTIONAL INJURY DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	30.2	34.7	37.0	40.5	23.3	28.7
1-4 years	30.7	38.7	29.7	39.5	31.8	37.8
5-14 years	18.6	20.5	22.0	24.1	15.2	16.7
15-24 years	85.5	106.3	124.9	146.7	44.5	64.1
25-34 years	91.3	110.2	135.2	158.2	49.3	64.1
35-44 years	114.0	130.9	174.0	199.0	57.9	67.1
45-54 years	111.8	123.8	158.0	174.6	69.4	77.3
55-64 years	90.8	98.1	135.2	147.2	52.1	55.3
65-74 years	116.1	122.1	168.6	179.0	74.5	76.9
75-84 years	187.5	198.4	238.2	251.8	153.4	162.5
85 years +	342.8	342.8	401.2	401.2	309.1	309.1

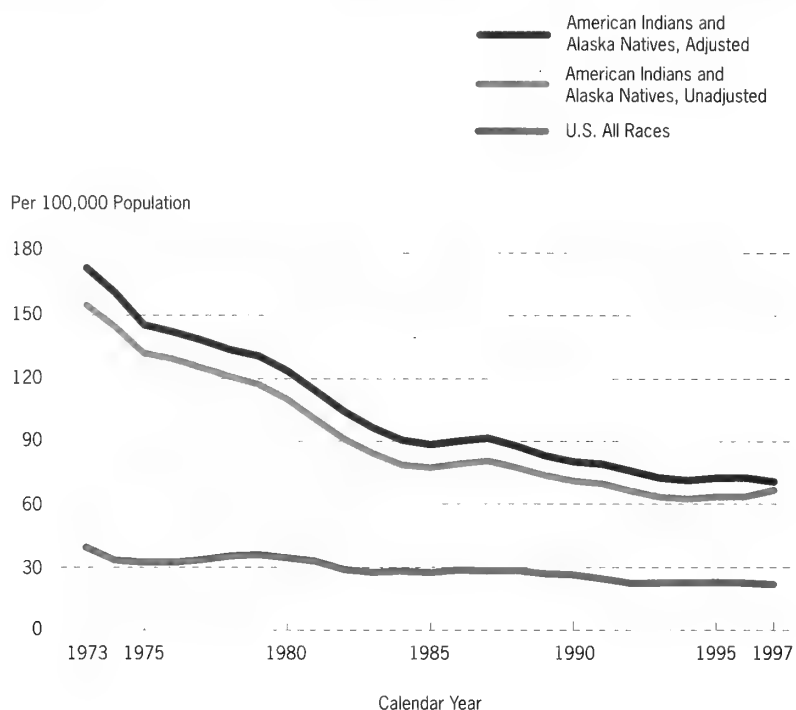
  

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	20.1	22.1	18.1	17.0	18.4	15.6
1-4 years	13.1	15.2	10.8	11.8	13.9	9.7
5-14 years	8.7	10.6	6.7	8.0	9.9	6.0
15-24 years	36.5	52.1	20.1	38.3	54.0	21.5
25-34 years	31.8	48.4	15.2	31.7	47.9	15.0
35-44 years	33.0	49.5	16.8	31.9	47.6	16.0
45-54 years	31.0	46.1	16.4	29.2	43.1	15.5
55-64 years	32.6	46.4	20.0	31.0	43.6	19.4
65-74 years	46.4	63.0	32.9	45.2	61.1	32.2
75-84 years	103.4	135.6	82.3	103.5	135.3	82.5
85 years +	276.5	362.9	241.6	284.5	373.9	248.9

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 18** AGE-ADJUSTED MOTOR VEHICLE DEATH RATES FOR MALES

The AI/AN male age-adjusted motor vehicle unintentional injury death rate has decreased 59 percent since 1972-74. In 1972-74, the AI/AN male rate (172.6) was 4.4 times the 1973 U.S. all-races male rate (39.3) and 4.5 times the 1973 U.S. white male rate (38.4). For 1996-98, the AI/AN male rate (70.7) is 69 percent greater than the 1997 U.S. all-races male rate (21.7) and the U.S. white male rate (21.6). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 18** MOTOR VEHICLE DEATHS AND DEATH RATES FOR MALES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	396	466						
1996-1998 (1997)	407	462	66.6	70.7	21.7	21.6	3.3	3.3
1995-1997 (1996)	417	481	63.6	72.6	22.4	22.4	3.2	3.2
1994-1996 (1995)	396	456	63.5	72.5	22.7	22.6	3.2	3.2
1993-1995 (1994)	373	424	62.5	71.3	22.5	22.5	3.2	3.2
1992-1994 (1993)	367	423	63.4	72.5	22.4	22.5	3.2	3.2
1991-1993 (1992)	382	443	66.3	75.8	22.3	22.2	3.4	3.4
1990-1992 (1991)	393	449	69.7	79.1	24.4	24.4	3.2	3.2
1989-1991 (1990)	399	451	71.1	80.2	26.3	26.3	3.0	3.0
1988-1990 (1989)	381	432	73.7	83.1	26.8	26.8	3.1	3.1
1987-1989 (1988)	410	467	77.4	87.7	28.3	28.5	3.1	3.1
1986-1988 (1987)	423	481	80.6	91.5	28.1	28.4	3.3	3.2
1985-1987 (1986)	395	447	79.2	90.1	28.5	28.7	3.2	3.1
1984-1986 (1985)	354	403	77.4	88.4	27.3	27.6	3.2	3.2
1983-1985 (1984)	351	404	78.7	90.5	28.0	28.4	3.2	3.2
1982-1984 (1983)	358	413	84.1	96.3	27.4	27.8	3.5	3.5
1981-1983 (1982)	362	408	90.9	104.0	28.7	29.3	3.6	3.5
1980-1982 (1981)	405	462	100.2	113.8	32.7	33.4	3.5	3.4
1979-1981 (1980)	429	488	109.9	123.5	34.3	34.8	3.6	3.5
1978-1980 (1979)	448	488	117.0	130.6	35.8	36.2	3.6	3.6
1977-1979 (1978)	431	486	120.8	133.6	35.1	35.2	3.8	3.8
1976-1978 (1977)	416	458	125.0	138.2	33.3	33.2	4.1	4.2
1975-1977 (1976)	413	450	129.2	142.1	32.1	31.8	4.4	4.5
1974-1976 (1975)	419	462	131.9	145.4	32.2	31.7	4.5	4.6
1973-1975 (1974)	357	396	144.4	160.7	33.2	32.8	4.8	4.9
1972-1974 (1973)	443	492	154.8	172.6	39.3	38.4	4.4	4.5
(1972)	399	442						
1954-1956 (1955)	—		—		38.4	37.8		

— Data not available

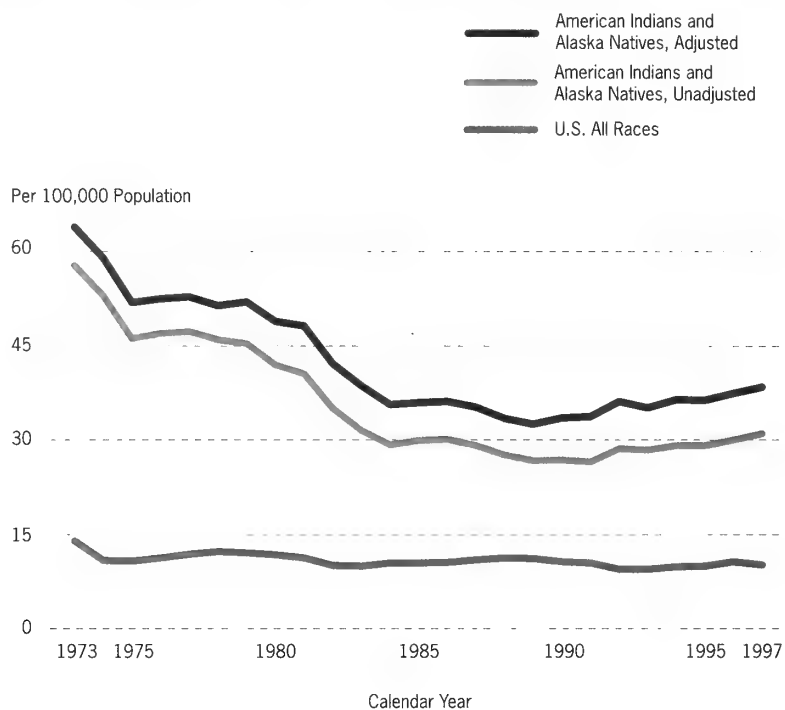
<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Data from 1972 forward are drawn from specific counties in the IHS service area. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 19** AGE-ADJUSTED MOTOR VEHICLE DEATH RATES FOR FEMALES

The AI/AN female age-adjusted motor vehicle unintentional injury death rate has decreased 40 percent since 1972-74.

In 1972-74, the AI/AN female rate (63.9) was 4.6 times the 1973 U.S. all-races and U.S. white female rates (both 14.0). For 1996-98, the AI/AN female rate (38.5) is 277 percent greater than the 1997 U.S. all-races female rate (10.2) and 274 percent greater than the U.S. white female rate (10.3). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.





**TABLE 19** MOTOR VEHICLE DEATHS AND DEATH RATES FOR FEMALES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	223	278						
1996-1998 (1997)	204	253	31.1	38.5	10.2	10.3	3.8	3.7
1995-1997 (1996)	208	257	30.1	37.5	10.7	11.0	3.5	3.4
1994-1996 (1995)	194	247	29.2	36.4	10.0	10.3	3.6	3.5
1993-1995 (1994)	179	218	29.2	36.5	9.9	10.0	3.7	3.7
1992-1994 (1993)	201	249	28.5	35.2	9.5	9.8	3.7	3.6
1991-1993 (1992)	156	197	28.7	36.2	9.5	9.6	3.8	3.8
1990-1992 (1991)	165	218	26.6	33.8	10.5	10.8	3.2	3.1
1989-1991 (1990)	149	186	26.9	33.6	10.7	11.0	3.1	3.1
1988-1990 (1989)	155	186	26.8	32.6	11.2	11.5	2.9	2.8
1987-1989 (1988)	155	188	27.7	33.5	11.3	11.6	3.0	2.9
1986-1988 (1987)	151	185	29.2	35.3	11.0	11.4	3.2	3.1
1985-1987 (1986)	171	202	30.2	36.2	10.6	11.0	3.4	3.2
1984-1986 (1985)	154	184	30.0	36.0	10.5	10.8	3.4	3.3
1983-1985 (1984)	134	166	29.3	35.7	10.5	10.9	3.4	3.3
1982-1984 (1983)	140	175	31.6	38.7	10.0	10.3	3.9	3.8
1981-1983 (1982)	168	204	35.1	42.2	10.1	10.5	4.2	4.0
1980-1982 (1981)	165	193	40.6	48.2	11.3	11.7	4.3	4.1
1979-1981 (1980)	193	230	42.0	48.9	11.8	12.3	4.1	4.0
1978-1980 (1979)	168	192	45.4	52.0	12.1	12.6	4.3	4.1
1977-1979 (1978)	175	197	46.0	51.4	12.3	12.6	4.2	4.1
1976-1978 (1977)	177	197	47.3	52.8	11.9	12.2	4.4	4.3
1975-1977 (1976)	156	177	47.0	52.5	11.3	11.5	4.6	4.6
1974-1976 (1975)	151	169	46.2	51.9	10.8	10.9	4.8	4.8
1973-1975 (1974)	138	155	53.0	59.0	10.9	11.0	5.4	5.4
1972-1974 (1973)	184	204	57.8	63.9	14.0	14.0	4.6	4.6
(1972)	158	174						
1954-1956 (1955)	—		—		11.6	11.4		

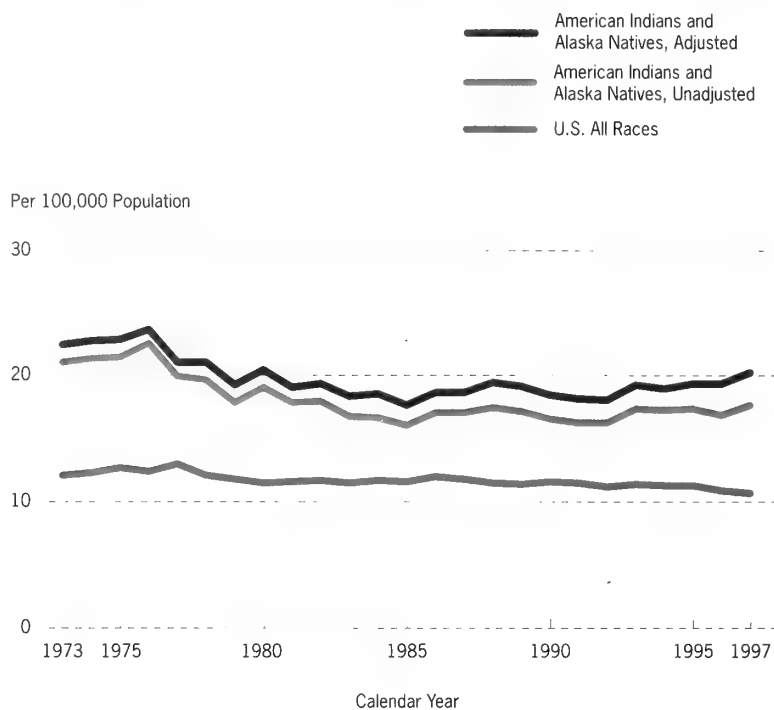
— Data not available

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Data from 1972 forward are drawn from specific counties in the IHS service area. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 20** AGE-ADJUSTED SUICIDE DEATH RATES

During the period since 1972-74, the AI/AN age-adjusted suicide death rate reached a peak in 1975-77 (23.6) and a low in 1984-1986 (17.6). The AI/AN rate in 1996-98 (20.2) is 15 percent greater than that low. It is also 91 percent higher than the 1997 U.S. all-races rate (10.6) and 79 percent greater than the 1997 U.S. white rate (11.3). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 20** SUICIDE DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

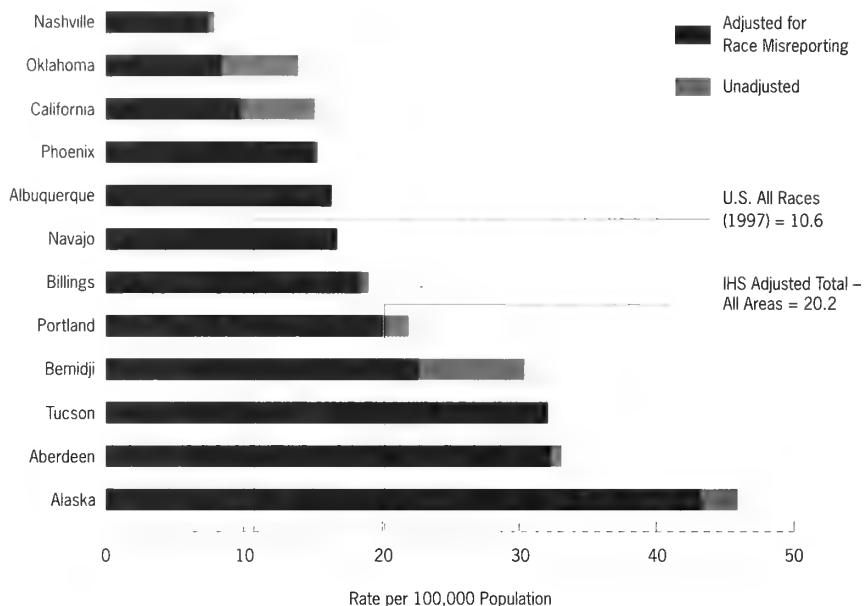
Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	252	283						
1996-1998 (1997)	234	273	17.6	20.2	10.6	11.3	1.9	1.8
1995-1997 (1996)	225	262	16.8	19.3	10.8	11.6	1.8	1.7
1994-1996 (1995)	205	228	17.3	19.3	11.2	11.9	1.7	1.6
1993-1995 (1994)	242	263	17.2	18.9	11.2	11.9	1.7	1.6
1992-1994 (1993)	204	226	17.3	19.2	11.3	12.0	1.7	1.6
1991-1993 (1992)	193	219	16.2	18.0	11.1	11.8	1.6	1.5
1990-1992 (1991)	184	200	16.2	18.1	11.4	12.1	1.6	1.5
1989-1991 (1990)	195	218	16.5	18.4	11.5	12.2	1.6	1.5
1988-1990 (1989)	192	217	17.1	19.1	11.3	12.0	1.7	1.6
1987-1989 (1988)	185	206	17.4	19.4	11.4	12.2	1.7	1.6
1986-1988 (1987)	187	206	17.0	18.6	11.7	12.5	1.6	1.5
1985-1987 (1986)	158	168	17.0	18.6	11.9	12.7	1.6	1.5
1984-1986 (1985)	172	193	16.0	17.6	11.5	12.3	1.5	1.4
1983-1985 (1984)	148	165	16.6	18.5	11.6	12.4	1.6	1.5
1982-1984 (1983)	161	177	16.7	18.3	11.4	12.2	1.6	1.5
1981-1983 (1982)	154	164	17.9	19.3	11.6	12.4	1.7	1.6
1980-1982 (1981)	157	166	17.8	19.0	11.5	12.2	1.7	1.6
1979-1981 (1980)	146	156	19.0	20.4	11.4	12.1	1.8	1.7
1978-1980 (1979)	162	177	17.8	19.2	11.7	12.4	1.6	1.5
1977-1979 (1978)	117	125	19.6	21.0	12.0	12.7	1.8	1.7
1976-1978 (1977)	161	169	19.9	21.0	12.9	13.6	1.6	1.5
1975-1977 (1976)	143	150	22.5	23.6	12.3	12.9	1.9	1.8
1974-1976 (1975)	139	146	21.4	22.8	12.6	13.3	1.8	1.7
1973-1975 (1974)	122	135	21.3	22.7	12.2	12.8	1.9	1.8
1972-1974 (1973)	116	121	21.0	22.4	12.0	12.6	1.9	1.8
(1972)	113	118						
1954-1956 (1955)	39		11.9		9.9	10.4		

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Reservation State data for 1955, the year IHS was established, are presented above. Data from 1972 forward are drawn from specific counties in the IHS service area. Reservation State data and county data are not directly comparable. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 21** AGE-ADJUSTED SUICIDE DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The age-adjusted suicide death rate is the highest in Alaska among the IHS Areas. The Alaska rate (45.9) is 39 percent greater than the next highest Area rate (Aberdeen, 33.1) and 5.8 times the lowest Area rate (Nashville, 7.9). Nashville is the only Area to have a rate below the U.S. all-races rate (10.6). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 21** AGE-ADJUSTED SUICIDE DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

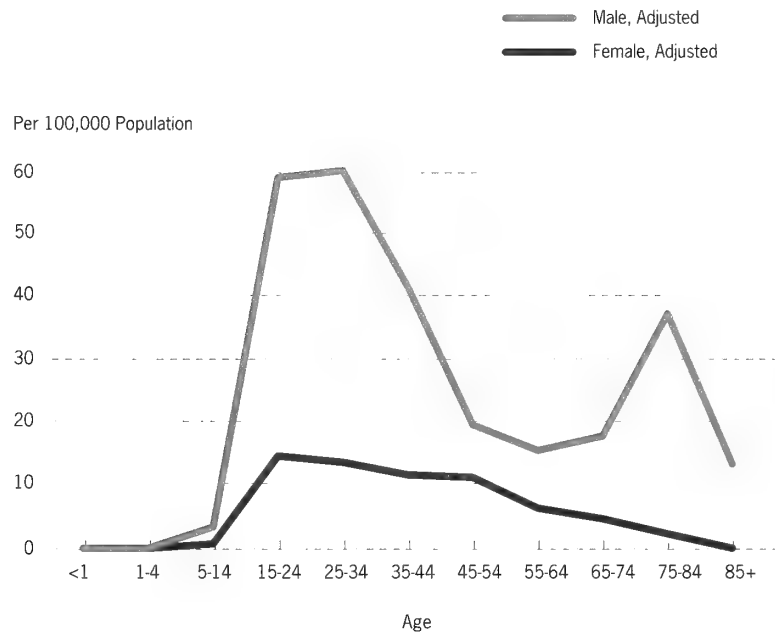
	Death		Rate <sup>1</sup>	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	30,535		10.6	
All IHS Areas	711	818	17.6	20.2
Aberdeen	83	85	32.3	33.1
Alaska	124	132	43.2	45.9
Albuquerque	37	37	16.4	16.4
Bemidji	53	72	22.7	30.4
Billings	27	28	18.5	19.1
California	34	53	9.8	15.2
Nashville	16	17	7.4	7.9
Navajo	94	94	16.8	16.8
Oklahoma	69	116	8.4	14.0
Phoenix	61	62	15.2	15.4
Portland	87	96	20.1	22.0
Tucson	26	26	32.1	32.1

<sup>1</sup> Age-adjusted rate per 100,000 population.  
Rates based on a small number of deaths should be interpreted with caution.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

**CHART 22** SUICIDE DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The highest AI/AN male suicide death rates occur in 15 to 24 (59.1) and 25 to 34 (60.2) year old age groups. The peaks for AI/AN females are reversed in terms of age groups (13.7 and 14.7, respectively), but these AI/AN female rates are over one-fifth the AI/AN male rates. The U.S. all-races male suicide death rates are highest for 85 years and older (60.3) and 75 to 84 years (40.9). For U.S. all-races females, the highest rates occur in the 35 to 54 year age groups (6.8 to 7.3). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 22 SUICIDE DEATH RATES BY AGE AND SEX**

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	2.0	2.1	3.2	3.4	3.0	0.7
15-24 years	31.7	37.4	51.4	59.1	55.0	14.7
25-34 years	30.7	36.5	52.3	60.2	51.0	13.7
35-44 years	24.0	26.2	39.0	41.7	33.0	11.7
45-54 years	13.8	15.3	19.1	19.7	20.0	11.3
55-64 years	9.8	10.7	14.7	15.6	8.0	6.4
65-74 years	9.9	10.6	16.4	17.9	4.0	4.7
75-84 years	15.1	16.4	34.0	37.4	1.0	2.3
85 years +	4.9	4.9	13.4	13.4	—*	—*

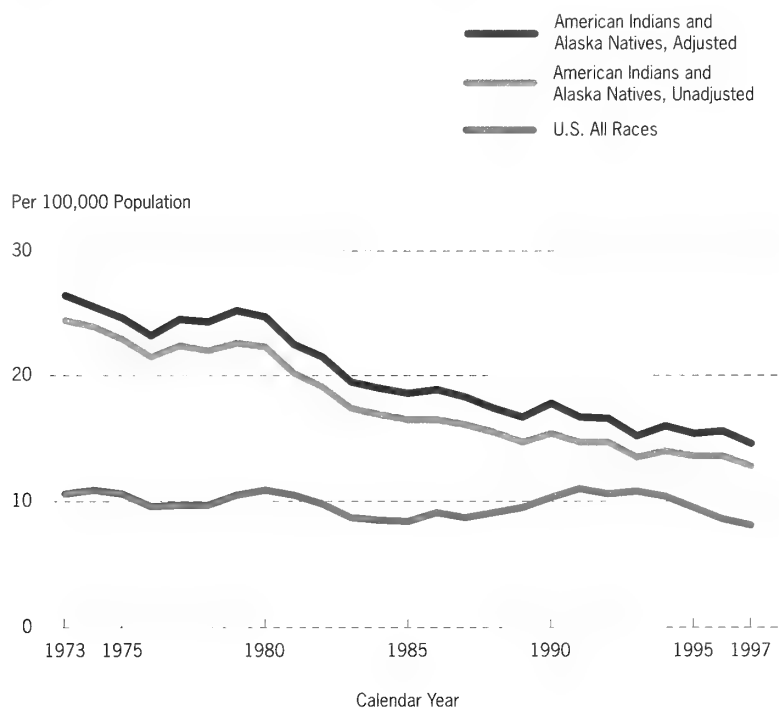
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	0.8	1.2	0.4	0.8	1.2	0.4
15-24 years	11.4	18.9	3.5	11.9	19.5	3.7
25-34 years	14.3	23.6	5.0	15.2	24.8	5.4
35-44 years	15.3	23.9	6.8	16.7	25.7	7.6
45-54 years	14.7	22.5	7.3	16.1	24.4	8.0
55-64 years	13.5	22.4	5.4	14.6	23.9	5.9
65-74 years	14.4	26.4	4.7	15.3	28.0	4.9
75-84 years	19.3	40.9	5.2	20.5	43.4	5.4
85 years +	20.8	60.3	4.9	22.0	65.0	4.9

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 23** AGE-ADJUSTED HOMICIDE DEATH RATES

The AI/AN age-adjusted homicide death rate have decreased 45 percent since 1972-74. The 1996-98 AI/AN rate (14.5) is 81 percent greater than the 1997 U.S. all-races rate (8.0), but 209 percent greater than the 1997 U.S. white rate (4.7). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 23** HOMICIDE DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1955-1997  
(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	172	199						
1996-1998 (1997)	181	217	12.7	14.5	8.0	4.7	1.8	3.1
1995-1997 (1996)	161	178	13.5	15.5	8.5	4.9	1.8	3.2
1994-1996 (1995)	198	231	13.5	15.3	9.4	5.5	1.6	2.8
1993-1995 (1994)	176	201	13.9	15.9	10.3	5.8	1.5	2.7
1992-1994 (1993)	168	190	13.4	15.1	10.7	6.0	1.4	2.5
1991-1993 (1992)	168	185	14.6	16.5	10.5	6.1	1.6	2.7
1990-1992 (1991)	199	229	14.6	16.6	10.9	6.2	1.5	2.7
1989-1991 (1990)	153	180	15.3	17.7	10.2	5.9	1.7	3.0
1988-1990 (1989)	177	205	14.6	16.6	9.4	5.4	1.8	3.1
1987-1989 (1988)	160	178	15.4	17.3	9.0	5.3	1.9	3.3
1986-1988 (1987)	162	185	16.0	18.2	8.6	5.3	2.1	3.4
1985-1987 (1986)	184	213	16.4	18.8	9.0	5.6	2.1	3.4
1984-1986 (1985)	151	174	16.4	18.5	8.3	5.4	2.2	3.4
1983-1985 (1984)	146	156	16.8	18.9	8.4	5.5	2.3	3.4
1982-1984 (1983)	172	198	17.3	19.4	8.6	5.6	2.3	3.5
1981-1983 (1982)	146	166	19.0	21.4	9.7	6.3	2.2	3.4
1980-1982 (1981)	166	178	20.1	22.4	10.4	6.6	2.2	3.4
1979-1981 (1980)	174	198	22.2	24.6	10.8	6.9	2.3	3.6
1978-1980 (1979)	165	182	22.5	25.1	10.4	6.5	2.4	3.9
1977-1979 (1978)	158	173	21.9	24.2	9.6	6.0	2.5	4.0
1976-1978 (1977)	140	155	22.3	24.4	9.6	5.9	2.5	4.1
1975-1977 (1976)	144	155	21.4	23.1	9.5	5.5	2.4	4.2
1974-1976 (1975)	115	123	22.8	24.5	10.5	6.1	2.3	4.0
1973-1975 (1974)	136	148	23.8	25.4	10.8	6.0	2.4	4.2
1972-1974 (1973)	139	147	24.3	26.3	10.5	5.7	2.5	4.6
(1972)	93	103						
1954-1956 (1955)	77		23.8		4.8	2.4		

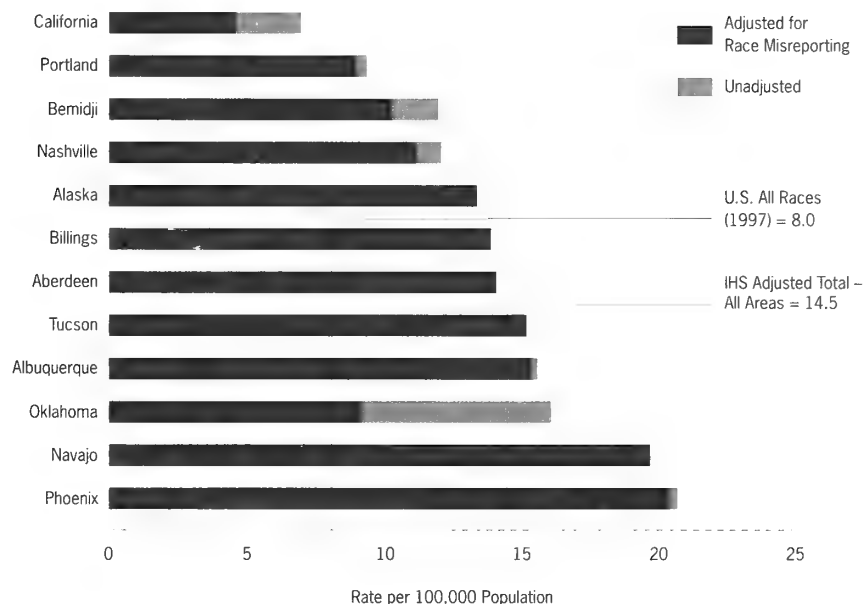
<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Reservation State data for 1955, the year IHS was established, are presented above. Data from 1972 forward are drawn from specific counties in the IHS service area. Reservation State data and county data are not directly comparable. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.



**CHART 24** AGE-ADJUSTED HOMICIDE DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The Phoenix (20.7) and Navajo (19.7) Area rates are more than double the U.S. all-races rate (8.0). The lowest IHS Area rate occurs in California (7.0). This is the only Area rate that is below the U.S. all-races rate. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 24** AGE-ADJUSTED HOMICIDE DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

	Death		Rate <sup>1</sup>	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	19,846		8.0	
All IHS Areas	514	594	12.7	14.5
Aberdeen	36	36	14.1	14.1
Alaska	38	38	13.4	13.4
Albuquerque	34	35	15.4	15.6
Bemidji	25	29	10.3	12.0
Billings	20	20	13.9	13.9
California	18	28	4.6	7.0
Nashville	24	26	11.2	12.1
Navajo	111	111	19.7	19.7
Oklahoma	76	135	9.2	16.1
Phoenix	80	82	20.4	20.7
Portland	39	41	9.0	9.4
Tucson	13	13	15.2	15.2

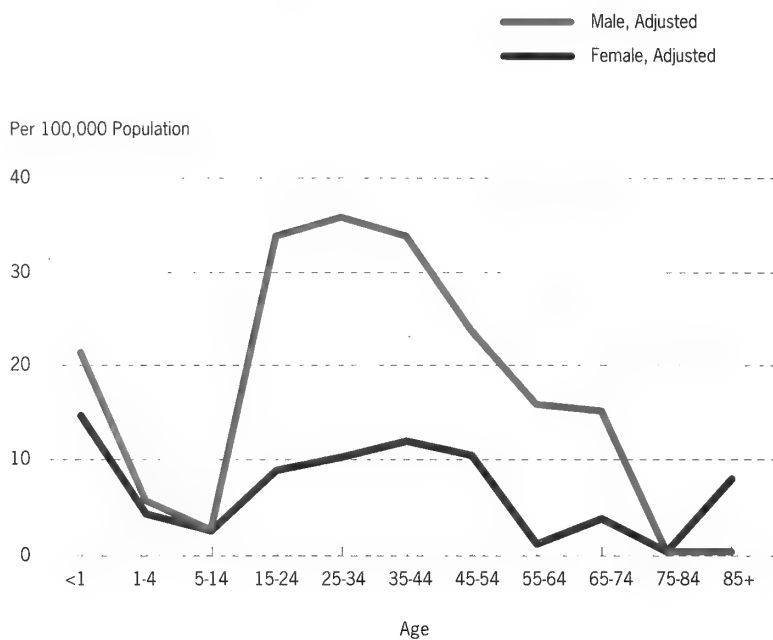
<sup>1</sup> Age-adjusted rate per 100,000 population.  
Rates based on a small number of deaths should be interpreted with caution.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

NOTE: Includes deaths due to homicide and legal intervention.

**CHART 25** HOMICIDE DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The highest AI/AN male homicide death rates occur in the age groups from 15 to 44 years (33.4 to 35.4). This is also true for U.S. all-races males (12.5 to 28.2). However, for AI/AN females and U.S. all-races females, the highest rate occurs in the under 1 year age group (14.4 and 7.3, respectively). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 25 HOMICIDE DEATH RATES BY AGE AND SEX**

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	13.3	17.8	14.1	21.1	12.6	14.4
1-4 years	4.2	4.7	5.4	5.4	3.0	4.0
5-14 years	1.8	2.3	1.7	2.3	2.0	2.2
15-24 years	17.8	21.3	29.6	33.4	5.6	8.6
25-34 years	18.7	22.4	30.6	35.4	7.3	10.0
35-44 years	20.0	22.2	30.3	33.4	10.3	11.7
45-54 years	15.6	16.5	22.1	23.4	9.6	10.2
55-64 years	7.7	7.7	15.6	15.6	0.8	0.8
65-74 years	7.9	8.6	13.4	14.9	3.5	3.5
75-84 years	—*	—*	—*	—*	—*	—*
85 years +	4.9	4.9	—*	—*	7.7	7.7

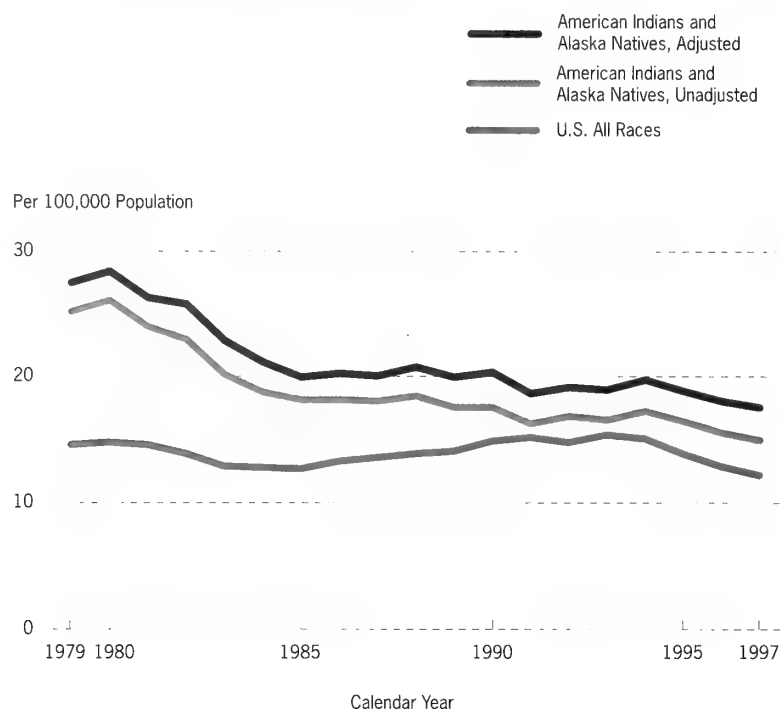
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	8.3	9.4	7.3	6.3	7.8	4.6
1-4 years	2.4	2.7	2.2	1.7	1.9	1.6
5-14 years	1.2	1.5	0.9	0.8	1.0	0.6
15-24 years	16.8	28.2	4.7	8.3	13.2	3.2
25-34 years	12.8	20.5	5.1	7.4	11.4	3.4
35-44 years	8.4	12.5	4.3	5.4	7.8	2.9
45-54 years	5.6	8.5	2.7	4.0	5.9	2.1
55-64 years	3.9	6.1	2.0	3.0	4.6	1.6
65-74 years	2.9	4.3	1.9	2.4	3.3	1.7
75-84 years	2.9	3.8	2.2	2.4	3.1	2.0
85 years +	3.8	5.9	3.0	3.4	5.2	2.7

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 26** AGE-ADJUSTED FIREARM INJURY DEATH RATES

The AI/AN age-adjusted firearm injury death rate have decreased 36 percent since 1978-80. U.S. all-races and white rates have decreased since 1979 (2 percent, respectively). The 1996-98 AI/AN rate (17.6) is 44 percent greater than the 1997 U.S. all-races rate (12.2) and 76 percent greater than the 1997 U.S. white rate (10.0). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 26** FIREARM INJURY<sup>1</sup> DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1979-1997

(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>2</sup> to:	
	Number Unadjusted	Number Adjusted <sup>2</sup>	Rate Unadjusted	Rate Adjusted <sup>2</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	213	251						
1996-1998 (1997)	202	244	15.0	17.6	12.2	10.0	1.4	1.8
1995-1997 (1996)	188	214	15.6	18.1	12.9	10.5	1.4	1.7
1994-1996 (1995)	227	261	16.5	18.9	13.9	11.3	1.4	1.7
1993-1995 (1994)	230	264	17.3	19.8	15.1	11.9	1.3	1.7
1992-1994 (1993)	204	232	16.6	19.0	15.4	12.5	1.2	1.5
1991-1993 (1992)	181	204	16.9	19.2	14.8	12.3	1.3	1.6
1990-1992 (1991)	221	253	16.3	18.7	15.2	12.5	1.2	1.5
1989-1991 (1990)	172	200	17.6	20.4	14.9	12.6	1.4	1.6
1988-1990 (1989)	215	252	17.6	20.0	14.1	12.1	1.4	1.7
1987-1989 (1988)	205	227	18.5	20.8	13.9	12.1	1.5	1.7
1986-1988 (1987)	182	203	18.1	20.1	13.6	12.1	1.5	1.7
1985-1987 (1986)	186	206	18.2	20.3	13.3	11.7	1.5	1.7
1984-1986 (1985)	186	208	18.2	20.0	12.7	11.4	1.6	1.8
1983-1985 (1984)	169	183	18.8	21.2	12.8	11.6	1.7	1.8
1982-1984 (1983)	185	216	20.2	22.9	12.9	11.5	1.8	2.0
1981-1983 (1982)	210	232	23.0	25.8	13.9	12.2	1.9	2.1
1980-1982 (1981)	210	226	24.0	26.3	14.6	12.5	1.8	2.1
1979-1981 (1980)	195	211	26.1	28.4	14.8	12.4	1.9	2.3
1978-1980 (1979)	229	250	25.2	27.5	14.6	12.2	1.9	2.3
(1978)	176	189						

<sup>1</sup> Includes deaths with ICD-9 codes: Unintentional injury caused by firearm missile—E922; suicide and self-inflicted injury by firearms—E955.0-E955.4; assault by firearms and legal intervention—E965.0-E965.4, E970; and injury by firearms, undetermined whether unintentionally or purposely inflicted—E985.0-E985.4. Injury by firearms causes exclude explosive and other causes indirectly related to firearms. Includes ICD-8 codes; E922, E955, E965, E970 and E985 (1978 only).

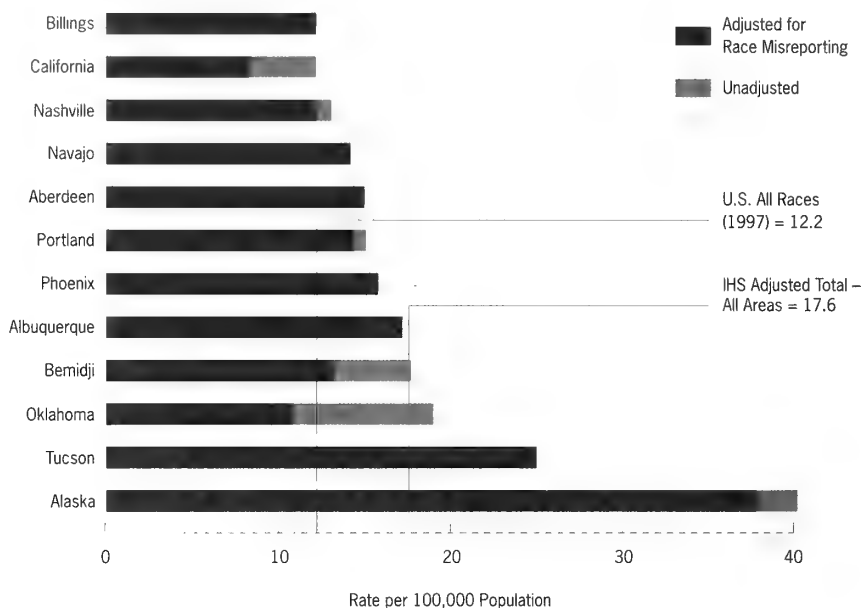
<sup>2</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Firearm death data are introduced in 1978 for the IHS service area. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

SOURCE: National Vital Statistics Reports. Deaths: Final Data for 1997, June 30, 1999. NCHS, DHHS, Report Vol. 47, No. 19, Table 18. Data not published for the U.S. populations prior to 1979.

**CHART 27** AGE-ADJUSTED FIREARM INJURY DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The AI/AN age-adjusted firearm injury death rate varies considerably among the IHS Areas. The highest Area rate (Alaska, 40.2) is 3.3 times the lowest Area rates (Billings and California, each with rates of 12.2); U.S. all-races rate tied with the lowest Area rates. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 27** AGE-ADJUSTED FIREARM INJURY<sup>1</sup> DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

	Death		Rate	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	32,436		12.2	
All IHS Areas	603	709	15.0	17.6
Aberdeen	39	39	15.0	15.0
Alaska	108	115	37.8	40.2
Albuquerque	37	37	17.2	17.2
Bemidji	31	42	13.2	17.7
Billings	18	18	12.2	12.2
California	29	43	8.3	12.2
Nashville	25	27	12.2	13.1
Navajo	81	81	14.2	14.2
Oklahoma	88	157	10.8	19.0
Phoenix	64	64	15.8	15.8
Portland	62	65	14.4	15.1
Tucson <sup>2</sup>	21	21	25.0	25.0

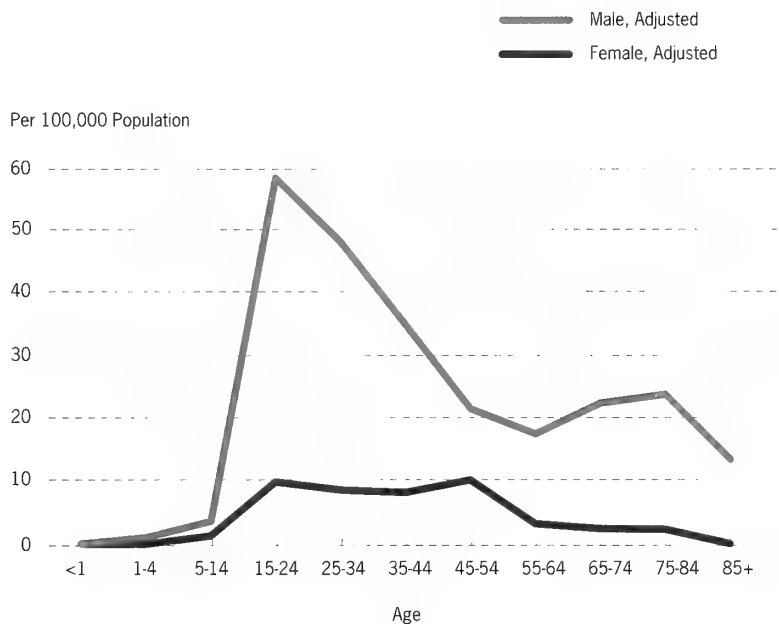
<sup>1</sup> Includes deaths with ICD-9 codes: Accident caused by firearm missile—E922, Suicide and self-inflicted injury by firearms—E955.0-E955.4, Assault by firearms and legal intervention—E965.0-E965.4, E970, and Injury by firearms, undetermined whether accidentally or purposely inflicted—E985.0-E985.4. Injury by firearm causes exclude explosive and other causes indirectly related to firearms.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.



**CHART 28** FIREARM INJURY DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The AI/AN male age-adjusted firearm injury death rate is highest for the 15 to 24 year age group (58.3). This is 5.7 times the peak for AI/AN females (10.2) which occurs in age group 45 to 54 years. For U.S. all-races male, the highest rate (45.8) is for age group 85 and older; it is 21 percent less than the AI/AN male rate. The highest U.S. all-races female rate (5.1) also occurs in age group 25 to 34 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 28** FIREARM INJURY<sup>1</sup> DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	0.5	0.5	1.0	1.0	—*	—*
5-14 years	2.3	2.5	3.2	3.6	1.3	1.3
15-24 years	28.7	34.6	49.6	58.3	7.0	9.9
25-34 years	22.8	27.9	41.0	48.1	5.4	8.6
35-44 years	19.3	21.1	32.2	34.9	7.1	8.2
45-54 years	13.2	15.6	19.7	21.5	7.3	10.2
55-64 years	9.4	9.8	16.6	17.5	3.2	3.2
65-74 years	9.9	11.2	19.4	22.4	2.4	2.4
75-84 years	9.6	10.9	20.4	23.8	2.3	2.3
85 years +	4.9	4.9	13.4	13.4	—*	—*

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	0.2	0.1	0.3	0.1	0.1	0.1
1-4 years	0.5	0.5	0.5	0.4	0.4	0.4
5-14 years	1.4	2.1	0.7	1.2	1.8	0.5
15-24 years	22.3	38.9	4.8	14.7	24.8	3.8
25-34 years	17.8	30.5	5.1	13.9	23.1	4.5
35-44 years	13.2	21.5	4.9	12.3	19.5	4.9
45-54 years	11.5	19.3	4.1	11.5	19.0	4.2
55-64 years	11.0	19.7	3.0	11.3	20.1	3.1
65-74 years	11.9	23.1	2.9	12.4	23.9	2.9
75-84 years	14.9	34.1	2.3	15.8	36.1	2.4
85 years +	14.3	45.8	1.7	15.2	49.3	1.7

—\* Represents zero.

<sup>1</sup> Includes deaths with ICD-9 codes: unintentional injury caused by firearm missile—E922; suicide and self-inflicted injury by firearms—E955.0-E955.4; assault by firearms and legal intervention—E965.0-E965.4, E970, and injury by firearms, undetermined whether unintentionally or purposely inflicted—E985.0-E985.4. Injury by firearms causes exclude explosive and other causes indirectly related to firearms.

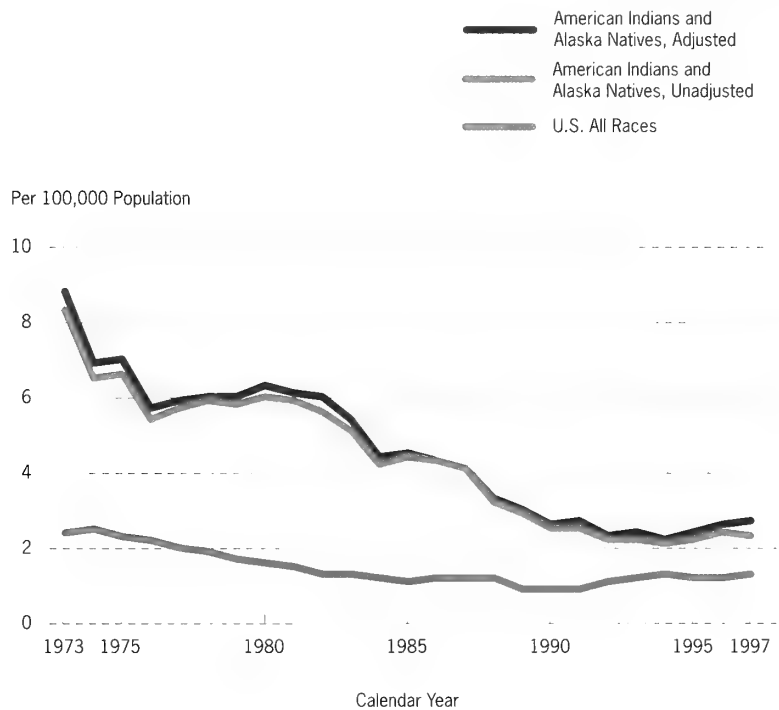
<sup>2</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.





**CHART 29** AGE-ADJUSTED OTHER INJURY DEATH RATES

The AI/AN age-adjusted death rate due to other injuries (undetermined injury and war injury) has decreased 69 percent since 1972-74. Despite the improvements, the 1996-98 AI/AN rate (2.7) is still at least double the 1997 U.S. all-races and white rates (1.3 and 1.2, respectively). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 29** OTHER INJURY<sup>1,2</sup> DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1973-1997  
(Age-Adjusted Rate per 100,000 Population)

Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>4</sup> to:	
	Number Unadjusted	Number Adjusted <sup>4</sup>	Rate Unadjusted	Rate Adjusted <sup>4</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	30	36						
1996-1998 (1997)	31	34	2.3	2.7	1.3	1.2	2.1	2.3
1995-1997 (1996)	29	34	2.4	2.6	1.2	1.2	2.2	2.2
1994-1996 (1995)	30	31	2.2	2.4	1.2	1.1	2.0	2.2
1993-1995 (1994)	24	28	2.1	2.2	1.3	1.2	1.7	1.8
1992-1994 (1993)	24	25	2.2	2.4	1.2	1.1	2.0	2.2
1991-1993 (1992)	31	34	2.2	2.3	1.1	1.0	2.1	2.3
1990-1992 (1991)	26	27	2.5	2.7	0.9	0.8	3.0	3.4
1989-1991 (1990)	31	33	2.5	2.6	0.9	0.8	2.9	3.3
1988-1990 (1989)	28	29	2.9	3.0	0.9	0.8	3.3	3.8
1987-1989 (1988)	34	35	3.2	3.3	1.2	1.0	2.8	3.3
1986-1988 (1987)	41	42	4.1	4.1	1.2	1.0	3.4	4.1
1985-1987 (1986)	50	50	4.3	4.3	1.2	1.1	3.6	3.9
1984-1986 (1985)	39	39	4.4	4.5	1.1	1.0	4.1	4.5
1983-1985 (1984)	39	41	4.2	4.4	1.2	1.1	3.7	4.0
1982-1984 (1983)	40	42	5.1	5.4	1.3	1.1	3.9	4.9
1981-1983 (1982)	52	54	5.6	6.0	1.3	1.2	4.6	5.0
1980-1982 (1981)	46	49	5.9	6.1	1.5	1.3	4.1	4.7
1979-1981 (1980)	39	39	6.0	6.3	1.6	1.4	3.9	4.5
1978-1980 (1979)	49	52	5.8	6.0	1.7	1.5	3.5	4.0
1977-1979 (1978)	37	38	5.9	6.0	1.9	1.6	3.2	3.8
1976-1978 (1977)	38	38	5.7	5.9	2.0	1.6	3.0	3.7
1975-1977 (1976)	39	43	5.4	5.7	2.2	1.8	2.6	3.2
1974-1976 (1975)	29	31	6.6	7.0	2.3	1.9	3.0	3.7
1973-1975 (1974)	50	53	6.5	6.9	2.5	2.1	2.8	3.3
1972-1974 (1973)	35 <sup>3</sup>	37	8.3	8.8	2.4	2.0	3.7	4.4
(1972)	46	48						

<sup>1</sup> Includes deaths with ICD-9 codes E980-E989; injury undetermined whether unintentionally or purposely inflicted.

<sup>2</sup> Includes deaths with ICD-9 codes E990-E999; injury resulting from operations of war.

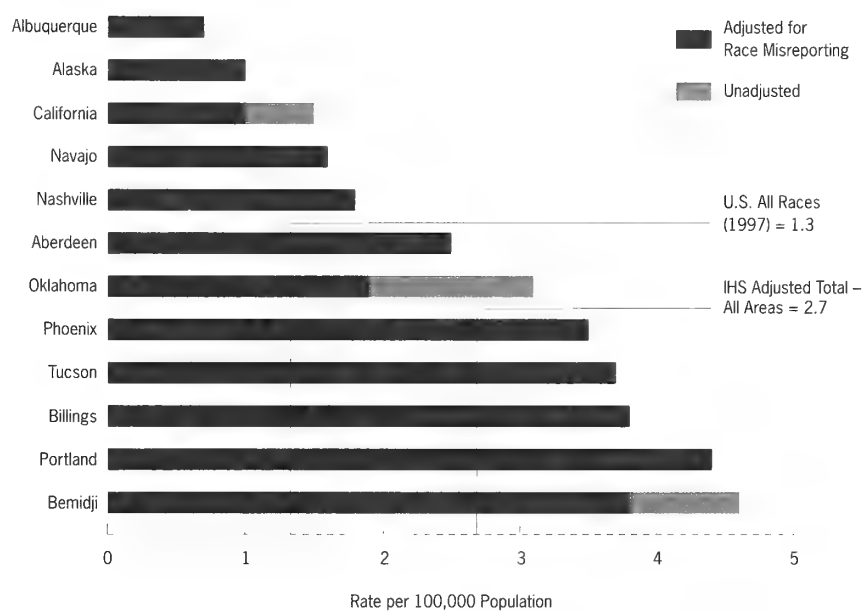
<sup>3</sup> In 1973 there was one AI/AN injury death resulting from operations of war. For each of the other years shown above there were no AI/AN injury deaths due to this cause.

<sup>4</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Starting in 1972 data are first available and are shown above for the specific counties in the IHS service area. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 30** AGE-ADJUSTED DEATH RATES FOR INJURY AND POISONING DEATHS  
DUE TO OTHER CAUSES BY AREA, CALENDAR YEARS 1996-1998

The AI/AN age-adjusted death rate due to other injuries (undetermined injury and war injury) is highest in Bemidji (4.6) and lowest in Albuquerque (0.7) among the IHS Areas. The Bemidji Area rate is 3.5 times the U.S. all-races rate (1.3) and for Albuquerque Area rate, 1.9 times. The Area rates should be interpreted with caution because of the small number of deaths involved (See Sources and Limitation of Data: Population Statistics). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 30** AGE-ADJUSTED DEATH RATES FOR INJURY AND POISONING DEATHS  
DUE TO OTHER CAUSES<sup>1</sup> BY AREA, CALENDAR YEARS 1996-1998

Death	Rate <sup>2</sup>			
	Unadjusted	Adjusted <sup>3</sup>	Unadjusted	Adjusted <sup>3</sup>
U.S. All Races (1997)	3,680		1.3	
All IHS Areas	90	104	2.3	2.7
Aberdeen	6	6	2.5	2.5
Alaska	3	3	1.0	1.0
Albuquerque	2	2	0.7	0.7
Bemidji	9	11	3.8	4.6
Billings	5	5	3.8	3.8
California	4	6	1.0	1.5
Nashville	3	3	1.8	1.8
Navajo	9	9	1.6	1.6
Oklahoma	15	25	1.9	3.1
Phoenix	13	13	3.5	3.5
Portland	18	18	4.4	4.4
Tucson	3	3	3.7	3.7

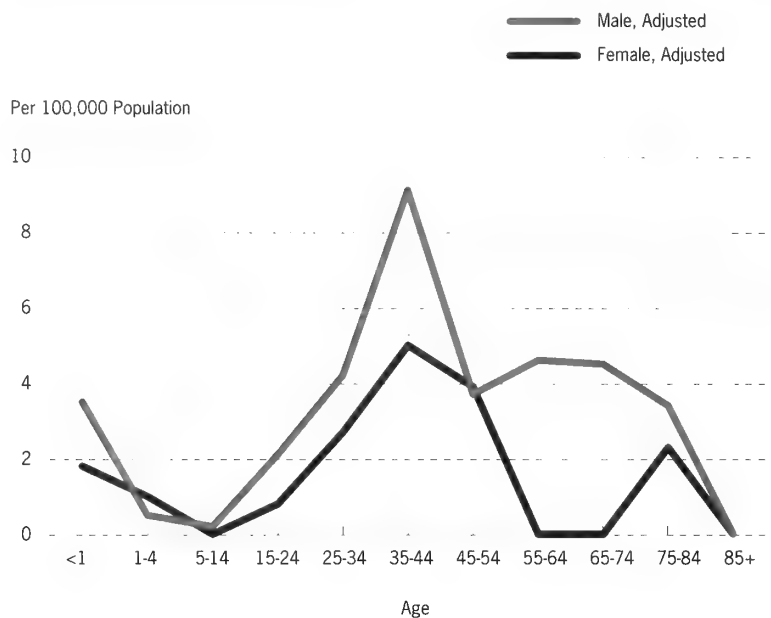
<sup>1</sup> Includes the following ICD-9 cause of death groups combined: Injury undetermined whether accidentally or purposely inflicted—E980-E989. Injury resulting from operations of war—E990-E999.

<sup>2</sup> Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

<sup>3</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

**CHART 31** OTHER INJURY DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The age-specific due to other injuries (undetermined injury and war injury) occur more frequently in males than females for all age groups except 1 to 4, and 45 to 54. The highest rates among AI/AN males (9.1), AI/AN females (5.0), U.S. all-races males (4.4) and U.S. females (1.5) are in age group 35 to 44 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 31** OTHER INJURY DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	2.7	2.7	3.5	3.5	1.8	1.8
1-4 years	0.5	0.7	0.5	0.5	0.5	1.0
5-14 years	0.1	0.1	0.2	0.2	—*	—*
15-24 years	1.3	1.4	1.8	2.1	0.8	0.8
25-34 years	2.8	3.4	3.4	4.2	2.2	2.7
35-44 years	5.9	7.0	8.3	9.1	3.6	5.0
45-54 years	3.5	3.8	3.7	3.7	3.4	3.9
55-64 years	2.1	2.1	4.6	4.6	—*	—*
65-74 years	2.0	2.0	4.5	4.5	—*	—*
75-84 years	2.7	2.7	3.4	3.4	2.3	2.3
85 years +	—*	—*	—*	—*	—*	—*

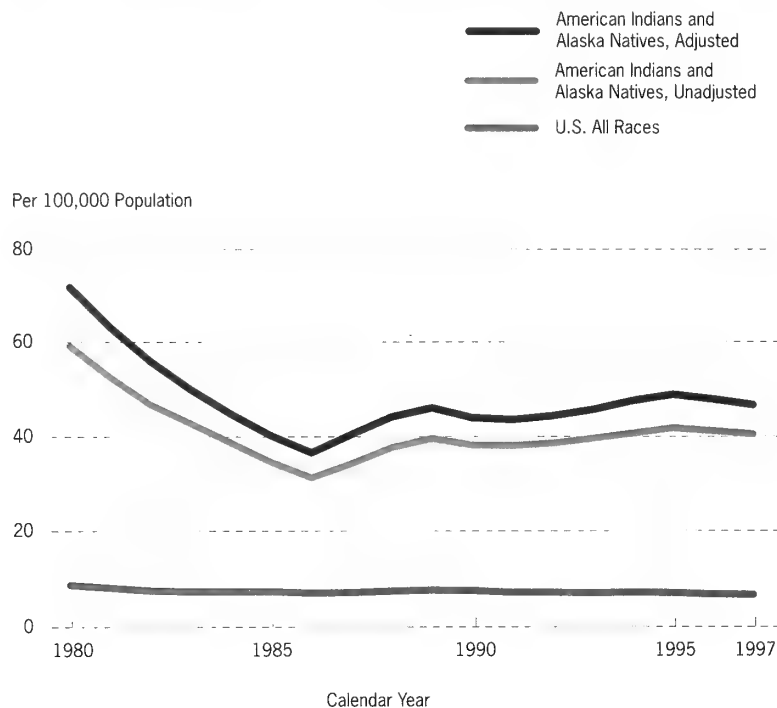
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	1.5	1.9	1.1	1.3	1.6	0.9
1-4 years	0.3	0.2	0.3	0.2	0.2	0.2
5-14 years	0.1	0.2	0.1	0.1	0.2	0.1
15-24 years	1.0	1.6	0.4	0.9	1.4	0.4
25-34 years	1.8	2.7	0.9	1.7	2.5	0.9
35-44 years	3.0	4.4	1.5	2.8	4.1	1.4
45-54 years	1.9	2.8	1.0	1.8	2.6	1.0
55-64 years	1.0	1.4	0.7	0.9	1.2	0.7
65-74 years	0.7	1.0	0.5	0.7	0.9	0.5
75-84 years	0.8	1.2	0.5	0.7	1.1	0.5
85 years +	1.4	2.2	1.1	1.4	2.3	1.0

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 32** AGE-ADJUSTED ALCOHOL-RELATED DEATH RATES

Problem drinking is associated with injuries. The AI/AN population has an age-adjusted alcohol-related death rate (46.5) that is 7.4 times the U.S. all-races rate (6.3) and 7.8 times the U.S. white rate (6.0). Between 1979-81 and 1985-87, the AI/AN rate decreased 49 percent. Since then, alcohol-related death rates have increased 28 percent. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 32** ALCOHOL-RELATED DEATHS AND DEATH RATES

American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1980-1997  
(Age-Adjusted Rate per 100,000 Population)

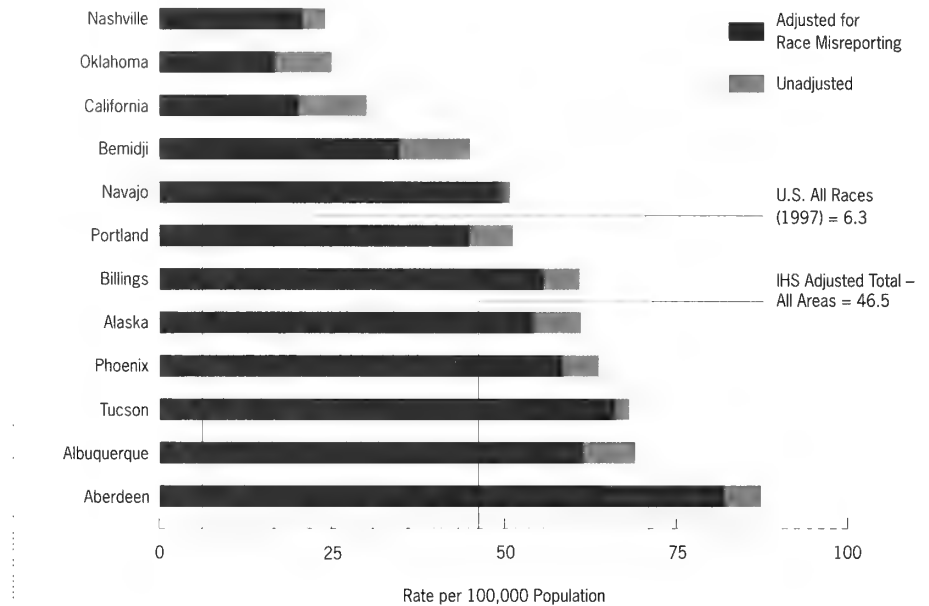
Calendar Year(s)	American Indian and Alaska Native				U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Number Unadjusted	Number Adjusted <sup>1</sup>	Rate Unadjusted	Rate Adjusted <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
(1998)	465	536						
1996-1998 (1997)	435	500	40.3	46.5	6.3	6.0	7.4	7.8
1995-1997 (1996)	456	527	41.0	47.7	6.4	6.0	7.5	8.0
1994-1996 (1995)	460	543	41.6	48.7	6.7	6.2	7.3	7.9
1993-1995 (1994)	427	494	40.5	47.4	6.8	6.2	7.0	7.6
1992-1994 (1993)	395	458	39.4	45.5	6.7	6.1	6.8	7.5
1991-1993 (1992)	402	458	38.4	44.2	6.8	6.1	6.5	7.2
1990-1992 (1991)	367	417	37.9	43.4	6.8	6.0	6.4	7.2
1989-1991 (1990)	350	403	38.0	43.8	7.2	6.2	6.1	7.1
1988-1990 (1989)	376	436	39.4	45.9	7.3	6.2	6.3	7.4
1987-1989 (1988)	375	441	37.5	44.0	7.1	5.9	6.2	7.5
1986-1988 (1987)	264	310	34.1	40.3	6.8	5.8	5.9	6.8
1985-1987 (1986)	264	310	31.1	36.4	6.7	5.7	5.4	6.6
1984-1986 (1985)	274	315	34.4	40.0	7.0	5.8	5.7	6.8
1983-1985 (1984)	302	348	38.5	44.6	7.0	5.9	6.4	6.9
1982-1984 (1983)	295	345	42.6	49.8	7.0	6.0	7.1	7.0
1981-1983 (1982)	293	343	46.6	55.8	7.2	6.2	7.8	7.4
1980-1982 (1981)	344	424	52.4	63.0	7.8	6.6	8.1	8.0
1979-1981 (1980)	369	436	59.0	71.5	8.4	6.9	8.5	8.3
(1979)	377	454						

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: For all years presented above, the causes of death that define alcohol-related deaths have been expanded to include alcoholic polyneuropathy—357.5 and the entire code group for unintentional poisoning by alcohol—E860, as defined by the National Center for Health Statistics, DHHS, for all years in which ICD-9 codes are employed (1979 to the present). For a complete description of the causes of death that defines deaths due to alcohol-related causes, refer to the Glossary of ICD-9 Codes. The AI/AN death rate columns present data for the three-year period specified and are age-adjusted to the 1940 standard population; the U.S. all-races and U.S. white columns present data for a one-year period. The number columns indicate total AI/AN deaths for the one-year period specified.

**CHART 33** AGE-ADJUSTED ALCOHOL-RELATED DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

The Aberdeen Area age-adjusted alcoholism death rate (87.4) is 13.9 times the U.S. all-races rate (6.3). It is 26 percent greater than the second highest IHS Area rate (Albuquerque, 69.1). The lowest IHS Area rate occurs in Nashville (24.1), but this is still 3.8 times the U.S. all-races rate. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 33** AGE-ADJUSTED ALCOHOL-RELATED DEATH RATES BY AREA, CALENDAR YEARS 1996-1998

	Death		Rate <sup>1</sup>	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
U.S. All Races (1997)	19,576		6.3	
All IHS Areas	1,356	1,563	40.3	46.5
Aberdeen	158	168	82.0	87.4
Alaska	127	143	54.4	61.2
Albuquerque	108	121	61.5	69.1
Bemidji	66	85	34.9	45.1
Billings	67	74	55.7	61.0
California	61	91	20.2	30.1
Nashville	39	45	20.8	24.1
Navajo	226	231	49.8	50.9
Oklahoma	126	189	16.7	25.0
Phoenix	180	195	58.6	63.8
Portland	157	179	45.0	51.3
Tucson	41	42	66.3	68.2

<sup>1</sup> Age-adjusted rate per 100,000 population.

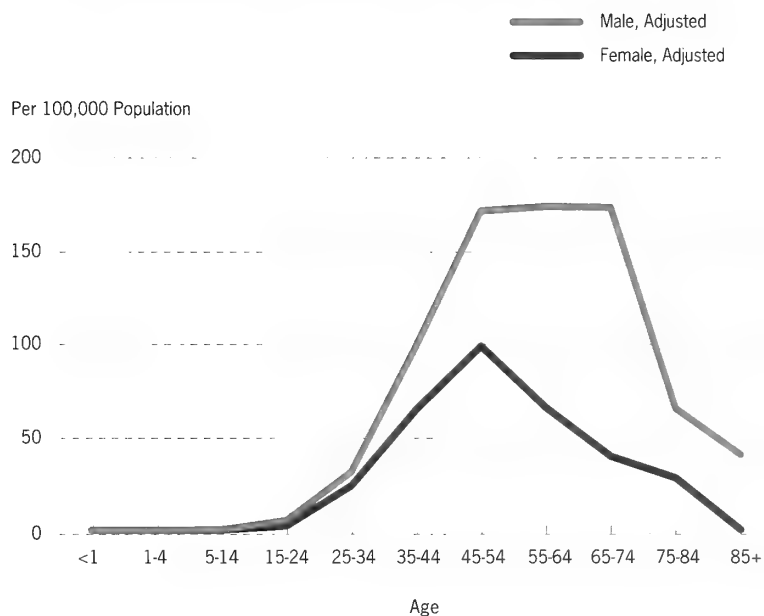
<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.





**CHART 34** ALCOHOL-RELATED DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The highest AI/AN male alcohol-related death rate (172.0) occurs in the 55 to 64 year age group. This is 5.2 times the U.S. all-races male peak (32.8 for 55 to 64 years). The AI/AN female high rate (97.6 for 45 to 54 years) is 43 percent less than the AI/AN male peak, but it is 10.8 times the U.S. all-races female peak (9.0 for 55 to 64 years). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 34 ALCOHOL-RELATED DEATH RATES BY AGE AND SEX**

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	0.1	0.1	0.2	0.2	—*	—*
15-24 years	3.3	3.7	5.1	5.1	1.3	2.1
25-34 years	23.5	27.1	29.2	30.9	18.1	23.4
35-44 years	69.5	80.3	86.8	97.8	53.3	63.9
45-54 years	113.5	132.1	148.1	169.7	81.8	97.6
55-64 years	99.3	114.8	148.1	172.0	56.9	64.9
65-74 years	85.8	97.6	149.2	171.5	35.5	39.0
75-84 years	39.7	42.4	61.2	64.6	25.2	27.5
85 years +	14.7	14.7	40.1	40.1	—*	—*

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	0.1	0.1	0.1	0.0	—*	0.1
1-4 years	0.0	—*	0.0	0.0	—*	0.0
5-14 years	0.0	0.0	0.0	0.0	0.0	0.0
15-24 years	0.3	0.4	0.1	0.3	0.4	0.1
25-34 years	2.0	2.8	1.2	1.9	2.7	1.0
35-44 years	8.9	13.0	4.9	8.6	12.7	4.5
45-54 years	16.9	26.9	7.3	15.7	25.0	6.6
55-64 years	20.3	32.8	9.0	19.1	30.4	8.6
65-74 years	17.7	30.0	7.9	17.3	28.8	7.9
75-84 years	10.3	18.6	4.8	10.2	18.3	4.8
85 years +	4.8	11.4	2.2	4.8	11.5	2.2

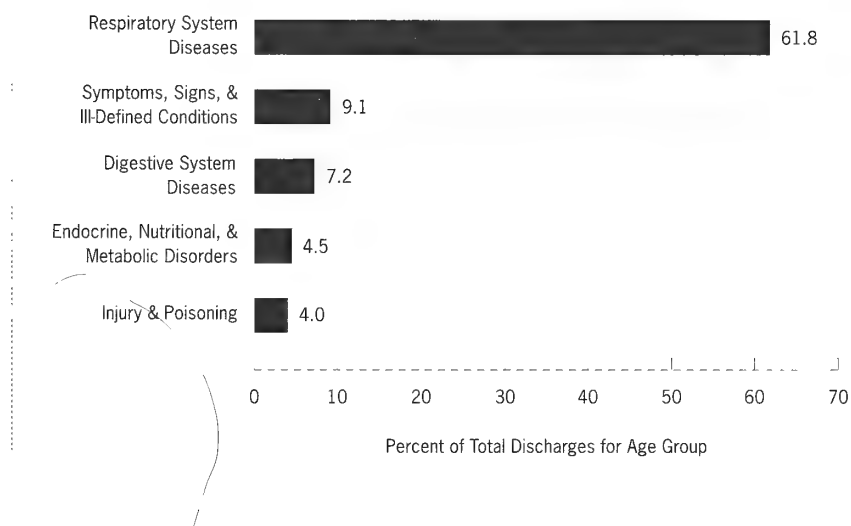
—\* Represents zero.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 35** LEADING CAUSES OF HOSPITALIZATION: AGES 1 TO 4 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the fifth leading cause of hospitalization for AI/AN patients, 1 to 4 years of age. For this AI/AN age group, 4.0 percent of all discharges pertain to injury and poisoning.



**TABLE 35** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S\* PATIENTS 1 TO 4 YEARS OF AGE

IHS and Tribal Direct and Contract General Hospitals, FY 2001

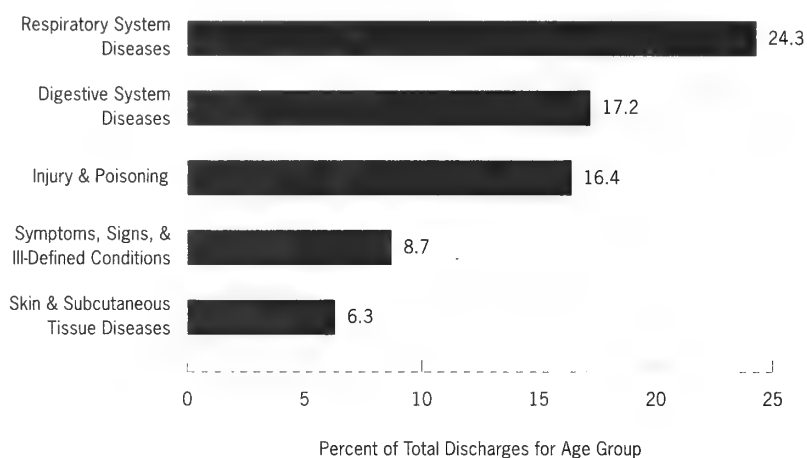
Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	4,943	2,704	2,239	100.0	54.7	45.3
Respiratory system diseases	3,055	1,702	1,353	61.8	62.9	60.4
Symptoms, signs, & ill-defined conditions	448	261	187	9.1	9.7	8.4
Digestive system diseases	355	199	156	7.2	7.4	7.0
Endocrine, nutritional, & metabolic disorders	221	111	110	4.5	4.1	4.9
Injury & poisoning	197	111	86	4.0	4.1	3.8
Infectious & parasitic diseases	182	97	85	3.7	3.6	3.8
Skin & subcutaneous tissue diseases	124	72	52	2.5	2.7	2.3
Nervous system & sense organ diseases	106	45	61	2.1	1.7	2.7
Genitourinary system diseases	97	29	68	2.0	1.1	3.0
Perinatal period conditions	36	21	15	0.7	0.8	0.7
All other	122	56	66	2.5	2.1	2.9

\* General Medical and Surgical.

SOURCES: Direct: On-request Report 21. Contract: On-request Report 19.

**CHART 36** LEADING CAUSES OF HOSPITALIZATION: AGES 5 TO 14 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the third leading cause of hospitalization for AI/AN patients, 5 to 14 years of age. For this AI/AN age group, 16.4 percent of all discharges pertain to injury and poisoning.



**TABLE 36** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S\* PATIENTS 5 TO 14 YEARS OF AGE

IHS and Tribal Direct and Contract General Hospitals, FY 2001

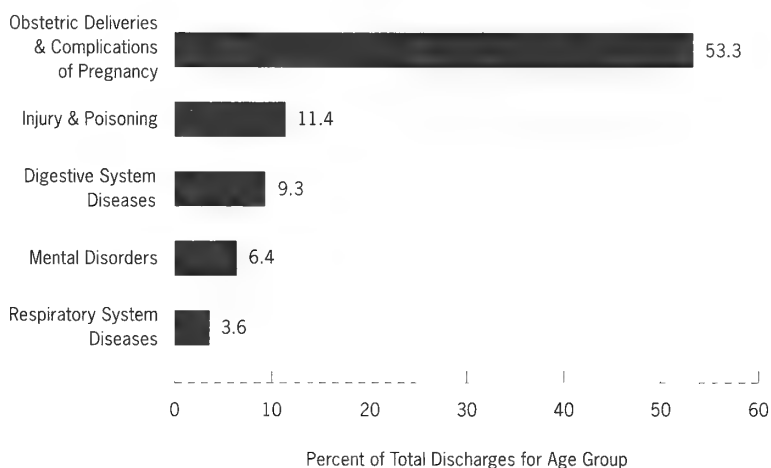
Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	3,134	1,763	1,371	100.0	56.3	43.7
Respiratory system diseases	763	419	344	24.3	23.8	25.1
Digestive system diseases	539	313	226	17.2	17.8	16.5
Injury & poisoning	513	350	163	16.4	19.9	11.9
Symptoms, signs, & ill-defined conditions	273	142	131	8.7	8.1	9.6
Skin & subcutaneous tissue diseases	199	121	78	6.3	6.9	5.7
Endocrine, nutritional, & metabolic disorders	145	78	67	4.6	4.4	4.9
Mental disorders	143	69	74	4.6	3.9	5.4
Infectious & parasitic diseases	142	85	57	4.5	4.8	4.2
Genitourinary system diseases	101	22	79	3.2	1.2	5.8
Supplementary classification	81	44	37	2.6	2.5	2.7
All other	235	120	115	7.5	6.8	8.4

\* General Medical and Surgical.

SOURCES: Direct: On-request Report 21. Contract: On-request Report 19.

**CHART 37** LEADING CAUSES OF HOSPITALIZATION: AGES 15 TO 24 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the second leading cause of hospitalization for AI/AN patients, 15 to 24 years of age. For this AI/AN age group, 11.4 percent of all discharges pertain to injury and poisoning.



**TABLE 37** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S\* PATIENTS 15 TO 24 YEARS OF AGE

IHS and Tribal Direct and Contract General Hospitals, FY 2001

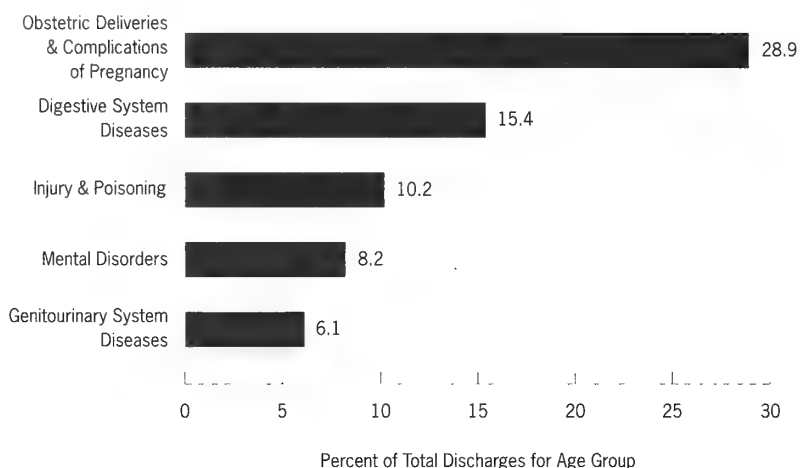
Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	11,428	2,511	8,917	100.0	22.0	78.0
				100.0	100.0	100.0
Obstetric deliveries & complications of pregnancy & puerperium	6,091	0	6,091	53.3	0.0	68.3
Injury & poisoning	1,304	834	470	11.4	33.2	5.3
Digestive system diseases	1,067	363	704	9.3	14.5	7.9
Mental disorders	728	381	347	6.4	15.2	3.9
Respiratory system diseases	412	174	238	3.6	6.9	2.7
Genitourinary system diseases	365	43	322	3.2	1.7	3.6
Symptoms, signs, & ill-defined conditions	301	140	161	2.6	5.6	1.8
Skin & subcutaneous tissue diseases	258	179	79	2.3	7.1	0.9
Supplementary classification	238	70	168	2.1	2.8	1.9
Endocrine, nutritional, & metabolic disorders	219	116	103	1.9	4.6	1.2
All other	445	211	234	3.9	8.4	2.6

\* General Medical and Surgical.

SOURCES: Direct: On-request Report 21. Contract: On-request Report 19.

**CHART 38** LEADING CAUSES OF HOSPITALIZATION: AGES 25 TO 44 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the third leading cause of hospitalization for AI/AN patients, 25 to 44 years of age. For this AI/AN age group, 10.2 percent of all discharges pertain to injury and poisoning.



**TABLE 38** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S PATIENTS 25 TO 44 YEARS OF AGE

IHS and Tribal Direct and Contract General Hospitals, FY 2001

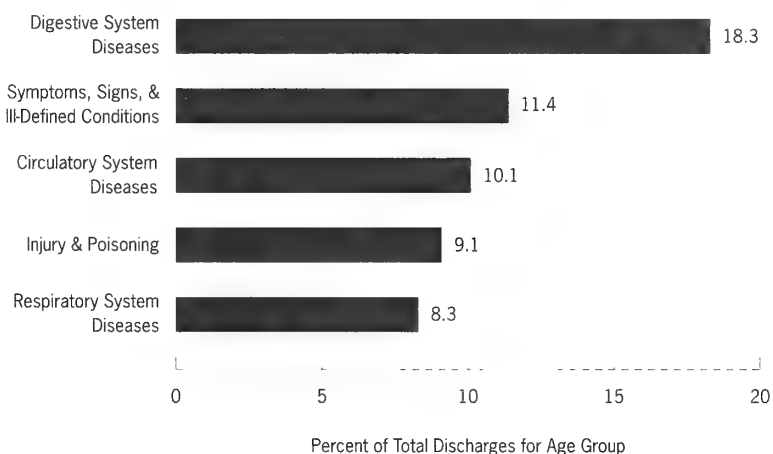
Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	23,843	8,209	15,634	100.0	34.4	65.6
Obstetric deliveries & complications of pregnancy & puerperium	6,881	0	6,881	28.9	0.0	44.0
Digestive system diseases	3,660	1,517	2,143	15.4	18.5	13.7
Injury & poisoning	2,431	1,520	911	10.2	18.5	5.8
Mental disorders	1,965	1,275	690	8.2	15.5	4.4
Genitourinary system diseases	1,452	220	1,232	6.1	2.7	7.9
Symptoms, signs, & ill-defined conditions	1,367	669	698	5.7	8.1	4.5
Skin & subcutaneous tissue diseases	1,058	666	392	4.4	8.1	2.5
Respiratory system diseases	1,031	456	575	4.3	5.6	3.7
Endocrine, nutritional, & metabolic disorders	934	520	414	3.9	6.3	2.6
Circulatory system diseases	660	413	247	2.8	5.0	1.6
All other	2,404	953	1,451	10.1	11.6	9.3

\* General Medical and Surgical.

SOURCES: Direct: On-request Report 21. Contract: On-request Report 19.

**CHART 39** LEADING CAUSES OF HOSPITALIZATION: AGES 45 TO 54 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the fourth leading cause of hospitalization for AI/AN patients, 45 to 54 years of age. For this AI/AN age group, 9.1 percent of all discharges pertain to injury and poisoning.



**TABLE 39** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S\* PATIENTS 45 TO 54 YEARS OF AGE

IHS and Tribal Direct and Contract General Hospitals, FY 2001

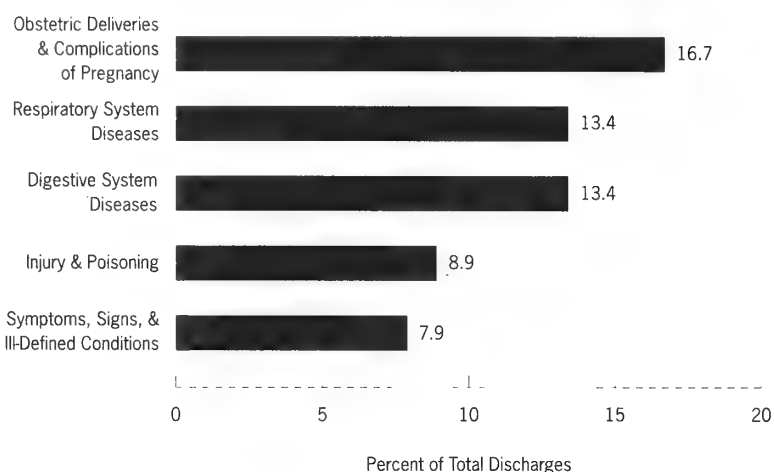
Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	9,853	4,584	5,269	100.0	46.5	53.5
Digestive system diseases	1,808	834	974	18.3	18.2	18.5
Symptoms, signs, & ill-defined conditions	1,124	498	626	11.4	10.9	11.9
Circulatory system diseases	999	583	416	10.1	12.7	7.9
Injury & poisoning	897	485	412	9.1	10.6	7.8
Respiratory system diseases	820	336	484	8.3	7.3	9.2
Endocrine, nutritional, & metabolic disorders	760	398	362	7.7	8.7	6.9
Genitourinary system diseases	740	147	593	7.5	3.2	11.3
Skin & subcutaneous tissue diseases	618	365	253	6.3	8.0	4.8
Mental disorders	565	360	205	5.7	7.9	3.9
Musculoskeletal system & connective tissue diseases	446	212	234	4.5	4.6	4.4
All other	1,076	366	710	10.9	8.0	13.5

\* General Medical and Surgical.

SOURCES: Direct: On-request Report 21. Contract: On-request Report 19.

**CHART 40** LEADING CAUSES OF HOSPITALIZATION,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning  
is the fourth leading  
cause of hospitalization  
for AI/AN patients  
(all ages). Nine (8.9)  
percent of all AI/AN  
discharges pertain to  
injury and poisoning.



**TABLE 40** TEN LEADING CAUSES OF HOSPITALIZATION FOR GM&S\* PATIENTS BY SEX

IHS and Tribal Direct and Contract General Hospitals, FY 2001

Diagnostic Category	Number of Discharges			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	77,780	30,915	46,865	100.0	39.7	60.3
Obstetric deliveries & complications of pregnancy & puerperium	13,009	0	13,009	16.7	0.0	27.8
Respiratory system diseases	10,441	5,104	5,337	13.4	16.5	11.4
Digestive system diseases	10,427	4,544	5,883	13.4	14.7	12.6
Injury & poisoning	6,909	4,003	2,906	8.9	12.9	6.2
Symptoms, signs, & ill-defined conditions	6,133	2,907	3,226	7.9	9.4	6.9
Circulatory system diseases	5,777	3,108	2,669	7.4	10.1	5.7
Genitourinary system diseases	4,266	955	3,311	5.5	3.1	7.1
Endocrine, nutritional, & metabolic disorders	4,191	2,054	2,137	5.4	6.6	4.6
Mental disorders	3,878	2,362	1,516	5.0	7.6	3.2
Skin & subcutaneous tissue diseases	3,267	1,871	1,396	4.2	6.1	3.0
All other	9,482	4,007	5,475	12.2	13.0	11.7

\* General Medical and Surgical.

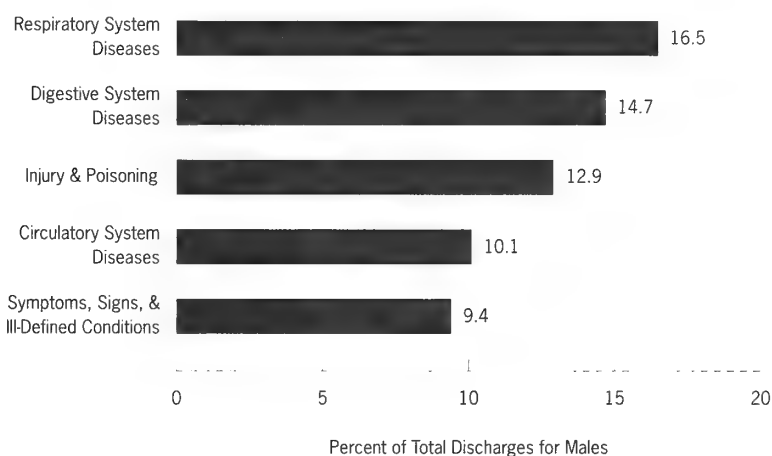
NOTE: The percentages in this table are slightly different from those in the IHS *Regional Differences in Indian Health* publication because of updated data.

SOURCES: Direct: Annual Report 2C. Contract: Annual Report 3I.



**CHART 41** LEADING CAUSES OF HOSPITALIZATION FOR MALES,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 2001

Injury and poisoning is the third leading cause of hospitalization for AI/AN male patients (all ages). Thirteen (12.9) percent of all AI/AN male discharges pertain to injury and poisoning. Injury and poisoning is not among the five leading causes for hospitalization for AI/AN females.



**TABLE 41** TEN LEADING CAUSES OF HOSPITALIZATION BY SEX

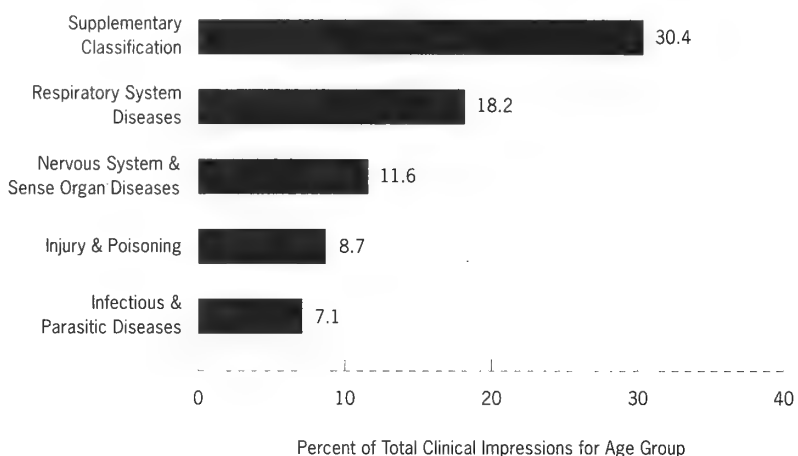
IHS and Tribal Direct and Contract General Hospitals, FY 2001

Male			Female		
Diagnostic Category	Number of Discharges	Percent of Total	Diagnostic Category	Number of Discharges	Percent of Total
All categories	30,915	100.0	All categories	46,865	100.0
Respiratory system diseases	5,104	16.5	Obstetric deliveries & complications of pregnancy & puerperium	13,009	27.8
Digestive system diseases	4,544	14.7	Digestive system diseases	5,883	12.6
Injury & poisoning	4,003	12.9	Respiratory system diseases	5,337	11.4
Circulatory system diseases	3,108	10.1	Genitourinary system diseases	3,311	7.1
Symptoms, signs, & ill-defined conditions	2,907	9.4	Symptoms, signs, & ill-defined conditions	3,226	6.9
Mental disorders	2,362	7.6	Injury & poisoning	2,906	6.2
Endocrine, nutritional, & metabolic disorders	2,054	6.6	Circulatory system diseases	2,669	5.7
Skin & subcutaneous tissue diseases	1,871	6.1	Endocrine, nutritional, & metabolic disorders	2,137	4.6
Musculoskeletal system & connective tissue diseases	987	3.2	Mental disorders	1,516	3.2
Genitourinary system diseases	955	3.1	Skin & subcutaneous tissue diseases	1,396	3.0
All other	3,020	9.8	All other	5,475	11.7

SOURCES: IHS and Tribal Direct: On-request Report 21. IHS and Tribal Contract: On-request Report 19.

**CHART 42** LEADING CAUSES OF AMBULATORY MEDICAL VISITS: AGES 5 TO 14 YEARS,  
IHS AND TRIBAL DIRECT AND CONTRACT FACILITIES, FY 2001

Injury and poisoning is the fourth leading cause of ambulatory medical visits for AI/AN patients, 5 to 14 years of age. For this AI/AN age group, 8.7 percent of all visits pertain to injury and poisoning.



**TABLE 42** TEN LEADING CAUSES OF AMBULATORY MEDICAL CLINICAL IMPRESSIONS FOR PATIENTS 5 TO 14 YEARS OF AGE

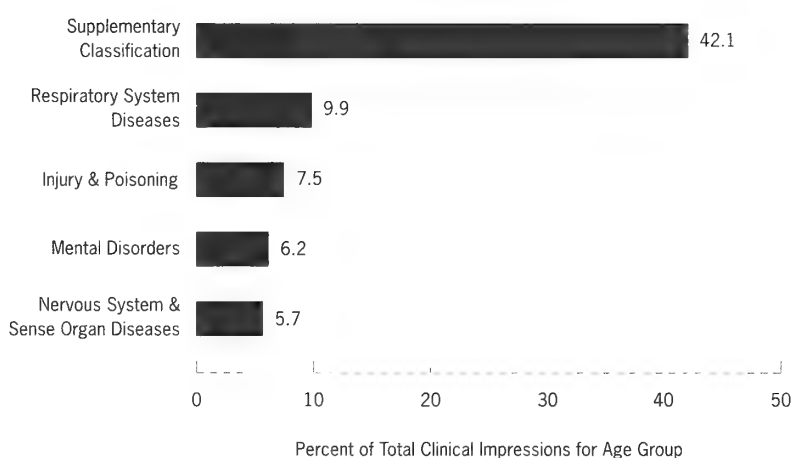
IHS and Tribal Direct and Contract Facilities, FY 2001

Diagnostic Category	Number of Clinical Impressions			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	880,479	440,177	440,302	100.0	50.0	50.0
Supplementary classification	267,258	135,737	131,521	30.4	30.8	29.9
Respiratory system diseases	160,038	77,115	82,923	18.2	17.5	18.8
Nervous system & sense organ diseases	101,999	47,760	54,239	11.6	10.9	12.3
Injury & poisoning	76,674	43,301	33,373	8.7	9.8	7.6
Infectious & parasitic diseases	62,623	26,595	36,028	7.1	6.0	8.2
Mental disorders	60,037	39,563	20,474	6.8	9.0	4.6
Symptoms, signs, & ill-defined conditions	44,649	21,457	23,192	5.1	4.9	5.3
Skin & subcutaneous tissue diseases	41,314	20,200	21,114	4.7	4.6	4.8
Digestive system diseases	20,987	9,992	10,995	2.4	2.3	2.5
Musculoskeletal system diseases	18,987	9,058	9,929	2.2	2.1	2.3
All other	25,913	9,399	16,514	2.9	2.1	3.8

SOURCE: Direct: National Patient Information Reporting System (NPIRS).

**CHART 43** LEADING CAUSES OF AMBULATORY MEDICAL VISITS: AGES 15 TO 24 YEARS, IHS AND TRIBAL DIRECT AND CONTRACT FACILITIES, FY 2001

Injury and poisoning is the third leading cause of ambulatory medical visits for AI/AN patients, 15 to 24 years of age. For this AI/AN age group, 7.5 percent of all visits pertain to injury and poisoning.



**TABLE 43** TEN LEADING CAUSES OF AMBULATORY MEDICAL CLINICAL IMPRESSIONS FOR PATIENTS 15 TO 24 YEARS OF AGE

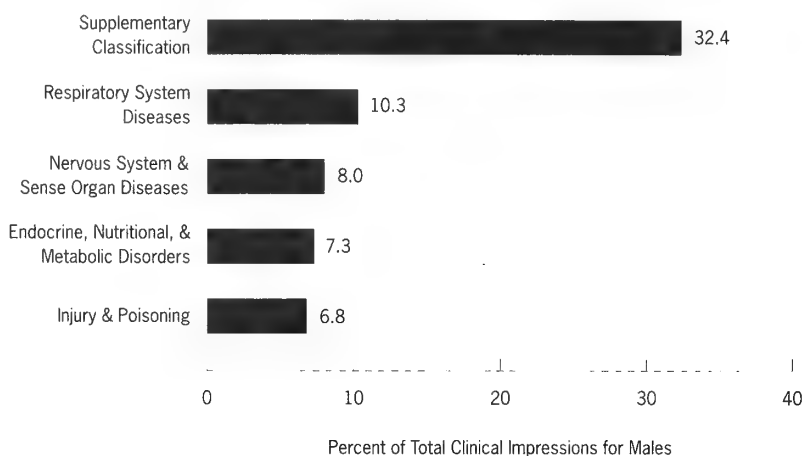
IHS and Tribal Direct and Contract Facilities, FY 2001

Diagnostic Category	Number of Clinical Impressions			Percent Distribution		
	Combined	Male	Female	Combined	Male	Female
All categories	1,076,529	337,894	738,635	100.0	31.4	68.6
Supplementary classification	453,731	104,444	349,287	42.1	30.9	47.3
Respiratory system diseases	106,296	38,662	67,634	9.9	11.4	9.2
Injury & poisoning	80,586	46,866	33,720	7.5	13.9	4.6
Mental disorders	66,965	31,552	35,413	6.2	9.3	4.8
Nervous system & sense organ diseases	61,368	23,136	38,232	5.7	6.8	5.2
Symptoms, signs, & ill-defined conditions	57,914	18,012	39,902	5.4	5.3	5.4
Musculoskeletal system diseases	45,722	19,420	26,302	4.2	5.7	3.6
Skin & subcutaneous tissue diseases	41,464	19,600	21,864	3.9	5.8	3.0
Genitourinary system diseases	40,167	3,028	37,139	3.7	0.9	5.0
Infectious & parasitic diseases	38,471	13,108	25,363	3.6	3.9	3.4
All other	83,845	20,066	63,779	7.8	5.9	8.6

SOURCE: Direct: National Patient Information Reporting System (NPIRS).

**CHART 44** LEADING CAUSES OF AMBULATORY MEDICAL VISITS FOR MALES,  
IHS AND TRIBAL DIRECT AND CONTRACT FACILITIES, FY 2001

Injury and poisoning  
is the fifth leading  
cause of ambulatory  
medical visits for AI/AN  
male patients (all ages).  
Seven (6.8) percent  
of all AI/AN male visits  
pertain to injury and  
poisoning.



**TABLE 44** TEN LEADING CAUSES OF AMBULATORY MEDICAL CLINICAL IMPRESSIONS BY SEX

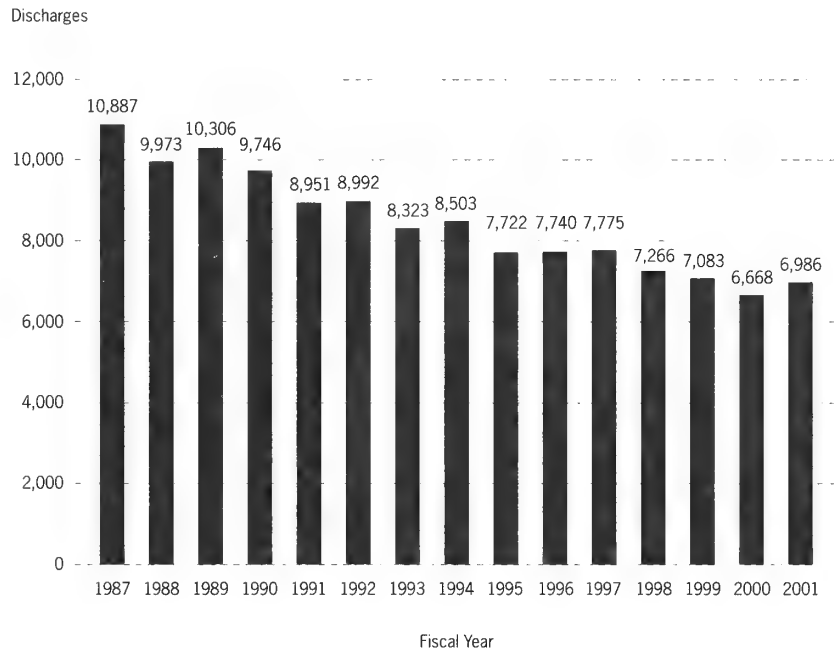
IHS and Tribal Direct and Contract Facilities, FY 2001

Male			Female		
Category	Number of Clinical Impressions	Percent of Total	Category	Number of Clinical Impressions	Percent of Total
All categories	3,034,511	100.0	All categories	4,965,895	100.0
Supplementary classification	983,325	32.4	Supplementary classification	1,876,815	37.8
Respiratory system diseases	312,402	10.3	Respiratory system diseases	477,861	9.6
Nervous system & sense organ diseases	241,799	8.0	Nervous system & sense organ diseases	333,941	6.7
Endocrine, nutritional, & metabolic disorders	220,108	7.3	Endocrine, nutritional, & metabolic disorders	332,807	6.7
Injury & poisoning	204,835	6.8	Musculoskeletal system diseases	315,589	6.4
Musculoskeletal system diseases	179,798	5.9	Symptoms, signs, & ill-defined conditions	289,291	5.8
Mental disorders	172,647	5.7	Mental disorders	222,207	4.5
Symptoms, signs, & ill-defined conditions	170,516	5.6	Genitourinary system diseases	197,572	4.0
Circulatory system diseases	155,776	5.1	Injury & poisoning	191,361	3.9
Skin & subcutaneous tissue diseases	112,631	3.7	Circulatory system diseases	169,696	3.4
All other	280,674	9.2	All other	558,755	11.3

SOURCE: Direct: National Patient Information Reporting System (NPIRS).

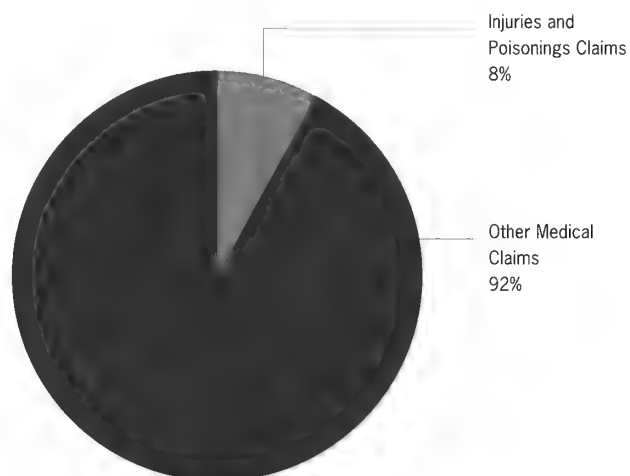
**CHART 45** HOSPITALIZATIONS FOR INJURIES AND POISONINGS,  
IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS, FY 1987-2001

The number of discharges for injury and poisoning from IHS and Tribal direct and contract hospitals has been on the decline. In FY 2001, the number of such discharges was 64 percent of what they were in 1987.



**CHART 46** CONTRACT HEALTH SERVICE (CHS) EXPENSES RELATED TO INJURIES AND POISONINGS, FY 2000-2003

Eight (8) percent of the expenses for IHS-administered contract health services (CHS) during 2000-2003 were associated with injuries and poisonings claims. For all inpatient claims there were none and 1 percent for outpatient claims.



**TABLE 46** CONTRACT HEALTH SERVICE (CHS) EXPENSES RELATED TO INJURIES AND POISONINGS

IHS Administered CHS, Fiscal Years 2000-2003

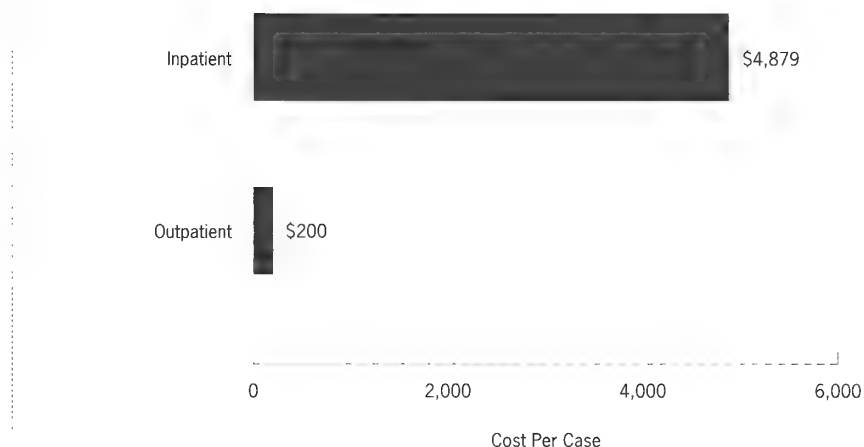
Type of Claim	Percent of Expenses		
	Total	Inpatient	Outpatient
Injuries and Poisonings	8	0	1
Other Medical	92	100	99

SOURCE: Fiscal Intermediary Claim History Files for Purchase Order Fiscal Years 2000-2003.

NOTE: Injuries were identified by claims with a Primary Diagnosis as indicated by an ICD-9 Code between 800-999. External cause of Injury Codes (E Codes) were not considered.

**CHART 47** CONTRACT HEALTH SERVICES (CHS) COST PER INJURIES AND POISONINGS CASE, FY 2000-2003

During 2000-2003, the average cost of a CHS inpatient case for injuries and poisonings was \$4,879 and for outpatient case was \$200. Outpatient claims outnumbered inpatient claims by a ratio of 166.1 to 1.



**TABLE 47** CONTRACT HEALTH SERVICES (CHS) COST PER INJURIES AND POISONINGS CASE

IHS Administered CHS, Fiscal Years 2000-2003

Type of Service	Number of Cases	Total Cost	Cost Per Case
Inpatient	56	\$273,197	\$4,897
Outpatient	9,303	\$1,862,540	\$200

SOURCE: Fiscal Intermediary Claim History Files for Purchase Order Fiscal Years 2000-2003.

NOTE: Injuries were identified by claims with a Primary Diagnosis as indicated by an ICD-9 Code between 800-999. External cause of Injury Codes (E Codes) were not considered.





# GLOSSARY OF ICD-9 CODES

## LIST OF 72 SELECTED CAUSES OF DEATH (1979-PRESENT)

Cause of Death	ICD-9 Codes
Shigellosis and amebiasis.....	004,006
Certain other intestinal infections.....	007-009
Tuberculosis.....	010-018
Tuberculosis of respiratory system.....	010-012
Other tuberculosis.....	013-018
Whooping cough.....	033
Streptococcal sore throat, scarlatina, and erysipelas.....	034-035
Meningococcal infection.....	036
Septicemia.....	038
Acute poliomyelitis.....	045
Measles.....	055
Viral hepatitis.....	070
Syphilis.....	090-097
All other infectious and parasitic diseases.....	001-003,005,020-032,037,039-041,*042-*044,046-054,056-066,071-088,098-139
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues.....	140-208
Malignant neoplasms of lip, oral cavity, and pharynx.....	140-149
Malignant neoplasms of digestive organs and peritoneum.....	150-159
Malignant neoplasms of respiratory and intrathoracic organs.....	160-165
Malignant neoplasm of breast.....	174-175
Malignant neoplasms of genital organs.....	179-187
Malignant neoplasms of urinary organs.....	188-189
Malignant neoplasms of all other and unspecified sites.....	170-173,190-199
Leukemia.....	204-208
Other malignant neoplasms of lymphatic and hematopoietic tissues.....	200-203
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature.....	210-239
Diabetes mellitus.....	250
Nutritional deficiencies.....	260-269
Anemias.....	280-285
Meningitis.....	320-322
Major cardiovascular diseases.....	390-448
Diseases of heart.....	390-398,402,404-429
Rheumatic fever and rheumatic heart disease.....	390-398
Hypertensive heart disease.....	402
Hypertensive heart and renal disease.....	404
Ischemic heart disease.....	410-414
Acute myocardial infarction.....	410
Other acute and subacute forms of ischemic heart disease.....	411
Angina pectoris.....	413
Old myocardial infarction and other forms of chronic ischemic heart disease.....	412,414
Other diseases of endocardium.....	424
All other forms of heart disease.....	415-423,425-429
Hypertension with or without renal disease.....	401,403
Cerebrovascular diseases.....	430-438
Intracerebral and other intracranial hemorrhage.....	431-432
Cerebral thrombosis and unspecified occlusion of cerebral arteries.....	434.0,434.9
Cerebral embolism.....	434.1
All other and late effects of cerebrovascular diseases.....	430,433,435-438
Atherosclerosis.....	440
Other diseases of arteries, arterioles, and capillaries.....	441-448
Acute bronchitis and bronchiolitis.....	466
Pneumonia and influenza.....	480-487
Pneumonia.....	480-486
Influenza.....	487

**Cause of Death****ICD-9 Codes**

Chronic obstructive pulmonary diseases and allied conditions .....	490-496
Bronchitis, chronic and unspecified .....	490-491
Emphysema .....	492
Asthma .....	493
Other chronic obstructive pulmonary diseases and allied conditions .....	494-496
Ulcer of stomach and duodenum .....	531-533
Appendicitis .....	540-543
Hernia of abdominal cavity and intestinal obstruction without mention of hernia .....	550-553,560
Chronic liver disease and cirrhosis .....	571
Cholelithiasis and other disorders of gallbladder .....	574-575
Nephritis, nephrotic syndrome, and nephrosis .....	580-589
Acute glomerulonephritis and nephrotic syndrome .....	580-581
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified .....	582-583,587
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause .....	584-586,588-589
Infections of kidney .....	590
Hyperplasia of prostate .....	600
Complications of pregnancy, childbirth, and the puerperium .....	630-676
Pregnancy with abortive outcome .....	630-638
Other complications of pregnancy, childbirth, and the puerperium .....	640-676
Congenital anomalies .....	740-759
Certain conditions originating in the perinatal period .....	760-779
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome .....	767-769
Other conditions originating in the perinatal period .....	760-766,770-779
Symptoms, signs, and ill-defined conditions .....	780-799
All other diseases .....	Residual
Accidents and adverse effects .....	E800-E949
Motor vehicle accidents .....	E810-E825
All other accidents and adverse effects .....	E800-E807,E826-E949
Suicide .....	E950-E959
Homicide and legal intervention .....	E960-E978
All other external causes .....	E980-E999

**LIST OF 61 SELECTED CAUSES OF INFANT DEATH (1979-PRESENT)****Cause of Death****ICD-9 Codes**

Certain intestinal infections .....	008-009
Whooping cough .....	.033
Meningococcal infection .....	.036
Septicemia .....	.038
Viral diseases .....	045-079
Congenital syphilis .....	.090
Remainder of infectious and parasitic diseases .....	001,007,010-032,034-035,037,039-041,*042-*044,080-088,091-139
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues .....	140-208
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature .....	210-239
Diseases of thymus gland .....	.254
Cystic fibrosis .....	.277.0
Diseases of blood and blood-forming organs .....	280-289
Meningitis .....	320-322
Other diseases of nervous system and sense organs .....	323-389

**Cause of Death****ICD-9 Codes**

Acute upper respiratory infections .....	460-465
Bronchitis and bronchiolitis .....	466,490-491
Pneumonia and influenza.....	480-487
Pneumonia .....	480-486
Influenza .....	487
Remainder of diseases of respiratory system .....	470-478,492-519
Hernia of abdominal cavity and intestinal obstruction without mention of hernia .....	550-553,560
Gastritis, duodenitis, and noninfective enteritis and colitis .....	535,555-558
Remainder of diseases of digestive system .....	520-534,536-543,562-579
Congenital anomalies.....	740-759
Anencephalus and similar anomalies .....	740
Spina bifida .....	741
Congenital hydrocephalus.....	742.3
Other congenital anomalies of central nervous system and eye .....	742.0-742.2,742.4-742.9,743
Congenital anomalies of heart.....	745-746
Other congenital anomalies of circulatory system .....	747
Congenital anomalies of respiratory system.....	748
Congenital anomalies of digestive system.....	749-751
Congenital anomalies of genitourinary system.....	752-753
Congenital anomalies of musculoskeletal system .....	754-756
Down's syndrome .....	758.0
Other chromosomal anomalies.....	758.1-758.9
All other and unspecified congenital anomalies .....	744,757,759
Certain conditions originating in the perinatal period .....	760-779
Newborn affected by maternal conditions, which may be unrelated to present pregnancy.....	760
Newborn affected by maternal complications of pregnancy .....	761
Newborn affected by complications of placenta, cord, and membranes.....	762
Newborn affected by other complications of labor and delivery.....	763
Slow fetal growth and fetal malnutrition .....	764
Disorders relating to short gestation and unspecified low birthweight.....	765
Disorders relating to long gestation and high birthweight.....	766
Birth trauma .....	767
Intrauterine hypoxia and birth asphyxia.....	768
Fetal distress in liveborn infant.....	768.2-768.4
Birth asphyxia.....	768.5-768.9
Respiratory distress syndrome .....	769
Other respiratory conditions of newborn.....	770
Infections specific to the perinatal period .....	771
Neonatal hemorrhage .....	772
Hemolytic disease of newborn, due to isoimmunization, and other perinatal jaundice .....	773-774
Syndrome of "infant of a diabetic mother" and neonatal diabetes mellitus.....	775.0-775.1
Hemorrhagic disease of newborn.....	776.0
All other and ill-defined conditions originating in the perinatal period .....	775.2-775.9,776.1-779
Symptoms, signs, and ill-defined conditions.....	780-799
Sudden infant death syndrome.....	798.0
Symptoms, signs, and all other ill-defined conditions.....	780-797,798.1-799
Accidents and adverse effects .....	E800-E949
Inhalation and ingestion of food or other object causing obstruction of respiratory tract or suffocation.....	E911-E912
Accidental mechanical suffocation.....	E913
Other accidental causes and adverse effects .....	E800-E910,E914-E949
Homicide .....	E960-E969
Child battering and other maltreatment .....	E967
Other homicide.....	E960-E966,E968-E969
All other causes .....	Residual

## ADDITIONAL CAUSES OF DEATH AND THEIR CORRESPONDING ICD-9 CODES USED IN THIS PUBLICATION

(These categories are not included as part of the 72 cause of death or 61 cause of infant death lists.

They are independent of these two lists but are valid cause of death codes to use for the causes indicated.)

### Cause of Death

### ICD-9 Codes

Alcohol-related deaths.....	291,303,305.0,357.5,425.5,535.3,571.0-571.3,790.3,E860
Breast cancer (females).....	174
Cervical cancer.....	180
Colon-rectal cancer .....	153.0-154.3,154.8,159.0
Drug-related deaths .....	292,304,305.2-305.9,E850-E858,E950.0-E950.5,E962.0,E980.0-E980.5
Gastroenteric deaths .....	004,006-009,535,555-556,558,562
Human immunodeficiency virus (HIV) infection.....	*042*-044
Firearm deaths.....	E922,E955.0-E955.4,E965.0-E965.4,E970,E985.0-E985.4
Injury and poisoning .....	E800-E807,E810-E825,E826-E949,E950-E959, E960-E978,E980-E989,E990-E999
Other injuries.....	E980-E989,E990-E999
Lung cancer.....	162.2-162.9
Maternal deaths .....	630-676
Prostate cancer .....	185

## LIST OF ICD-9-CM CODES USED IN PATIENT CARE CHARTS AND TABLES

### Condition

### ICD-9-CM Codes

Infectious and parasitic diseases.....	001-139
Neoplasms .....	140-239
Endocrine, nutritional, and metabolic diseases and immunity disorders .....	240-279
Diseases of the blood and blood-forming organs .....	280-289
Mental disorders .....	290-319
Diseases of the nervous system and sense organs.....	320-389
Diseases of the circulatory system.....	390-459
Diseases of the respiratory system .....	460-519
Diseases of the digestive system .....	520-579
Diseases of the genitourinary system .....	580-629
Complications of pregnancy, childbirth, and the puerperium .....	630-676
Diseases of the skin and subcutaneous tissue.....	680-709
Diseases of the musculoskeletal system and connective tissue .....	710-739
Congenital anomalies.....	740-759
Certain conditions originating in the perinatal period .....	760-779
Symptoms, signs, and ill-defined conditions.....	780-799
Injury and poisoning.....	800-999
Supplementary classification (classification of factors influencing health status and contact with health service).....	V01-V82



## METHODS USED TO RANK LEADING SITES OF CANCER DEATHS

The causes designated by the symbol # were ranked to designate the leading sites of cancer deaths.

Site of Cancer Death	ICD-9 Codes
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues .....	140-208
Malignant neoplasms of lip, oral cavity, and pharynx .....	140-149
# of lip .....	140
# of tongue .....	141
# of pharynx .....	146-149.0
of other and ill-defined sites within the lip, oral cavity, and pharynx .....	142-145, 149.1-149.9
Malignant neoplasms of digestive organs and peritoneum .....	150-159
# of esophagus .....	150
# of stomach .....	151
# of small intestine, including duodenum .....	152
# of colon .....	153
Hepatic and splenic flexures and transverse colon .....	153.0-153.1, 153.7
Descending colon .....	153.2
Sigmoid colon .....	153.3
# Cecum, appendix, and ascending colon .....	153.4-153.6
Other and colon, unspecified .....	153.8-153.9
# of rectum, rectosigmoid junction, and anus .....	154
# of liver and intrahepatic bile ducts .....	155
Liver, primary .....	155.0
Intrahepatic bile ducts .....	155.1
Liver, not specified as primary or secondary .....	155.2
# of gallbladder and extrahepatic bile ducts .....	156
# of pancreas .....	157
of retroperitoneum, peritoneum, and other and ill-defined sites within the digestive organs and peritoneum .....	158-159
Malignant neoplasms of respiratory and intrathoracic organs .....	160-165
# of larynx .....	161
# of trachea, bronchus, and lung .....	162
of all other and ill-defined sites within the respiratory system and intrathoracic organs .....	160, 163-165
Malignant neoplasms of bone, connective tissue, skin, and breast .....	170-175
# of bone and articular cartilage .....	170
# of connective and other soft tissue .....	171
# Melanoma of skin .....	172
Other malignant neoplasms of skin .....	173
# of female breast .....	174
# of male breast .....	175
Malignant neoplasms of genital organs .....	179-187
# of cervix uteri .....	180
of other parts of uterus .....	179, 181-182
# of ovary and other uterine adnexa .....	183
of other and unspecified female genital organs .....	184
# of prostate .....	185
# of testis .....	186
# of penis and other male genital organs .....	187

## Site of Cancer Death

## ICD-9 Codes

Malignant neoplasms of urinary organs.....	188-189
# of bladder.....	188
# of kidney and other and unspecified urinary organs .....	189
Malignant neoplasms of other and unspecified sites .....	190-199
# of eye .....	190
# of brain .....	191
of other and unspecified parts of nervous system .....	192
# of thyroid gland and other endocrine glands and related structures.....	193-194
of all other and unspecified sites .....	195-199
Malignant neoplasms of lymphatic and hematopoietic tissues .....	200-208
# Lymphosarcoma and reticulosarcoma.....	200
# Hodgkin's disease .....	201
Other malignant neoplasms of lymphoid and histiocytic tissue .....	202
# Multiple myeloma and immunoproliferative neoplasms .....	203
# Leukemia .....	204-208
Lymphoid leukemia.....	204
Myeloid leukemia.....	205
Monocytic leukemia.....	206
Other and unspecified leukemia .....	207-208





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